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THE SMALL COMMUNITY HOSPITAL

A SERIES OF EIGHT PAPERS

BY

JOHN ALLAN HORNSBY, M. D.

EDITOR OF "THE MODERN HOSPITAL"

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THE SMALL COMMUNITY HOSPITAL—ITS CREATION.

The Survey of the Town as to Its Needs—The Kind and Size of Hospital—Its Funds for Building and Maintenance, How to Be Raised—The Charter, the Organization, the Trustees and Their Election.

PAPER I.

FEWER than 12 percent of the sick people of this country are using the hospitals; all the others are being taken care of in their own homes. Considering the fact that bedside diagnosis and drug treatment are pretty nearly obsolete and that modern diagnosis of disease is a question of the various hospital laboratories, and that treatment has to do with diet, physical therapy, and good nursing, it naturally follows that 88 percent of the people in this country who become sick are not getting the right sort of care; consequently they are not getting well as promptly as they should, and more of them are dying than should die, and there is a far greater amount of suffering than there would be if everybody who was sick was getting proper and prompt attention.

A good many thoroughly informed men and women have a feeling that every hospital in the land should be architecturally as good as modern science can make it, and that the equipment should include all that medical science can call for in the diagnosis and treatment of disease; that

hospitals which cannot have all these advantages should close their doors, and the work which they are attempting to do should be turned over to hospitals that *are* properly built and well equipped. Perhaps if this idea were carried out, we might get along faster toward a day when there will be adequate hospital accommodation for all the people; but in the meantime a great mass of humanity would have to remain at home and suffer and die for want of proper nursing and adequate treatment of disease, because, after all, the cold fact is that hospital equipment today is far less a matter of inanimate apparatus and instruments than it is a matter of skill and capacity on the part of the hospital workers. In other words, a competent pathologist with a microscope and \$10 worth of apparatus will do far better work than an indifferently trained man with the completest laboratory ever designed.

We cannot possibly agree with the idea that, because a community is poor and unable to afford the funds for the building and equipment of an ideal hospital, the people of that community should be deprived of even a hospital atmosphere. This for several reasons: in the first place, the care of the sick in the beds in the hospital is only a part of a hospital's obligation to the community. The training and teaching of doctors and nurses in their community is a very important part of its duty; its example in sanitation, in hygiene, in inculcating good habits of living, in the use of good foods—these are all important parts of the duty of a hospital toward its community; and, even if the hospital were not caring for and curing a single member of the community, the institution, by reason of its mere existence, would be more than worth while as a workshop in which the physi-

cians of the community could acquire experience and improve their skill in their profession, so that they might be able the better to meet the emergencies of the community when such arose. It is beside the question that there is a good hospital twenty-five miles away; the transportation is bad and slow and uncertain; or, even if the transportation were good and prompt, the needs of the patient are urgent and he or she must have skilled operative attention immediately or die. How are the doctors in a community to acquire the necessary skill to take care of the health of the people unless they have access to a hospital? And it seems that if it cannot possibly be a good hospital, then even four walls, clean beds, and simple furniture, operating room, and ordinary kitchen and dining rooms, all pervaded by an atmosphere of skilled competence, is a very much better thing than no hospital at all. So it seems to us that every community of two or three thousand people is entitled to a hospital of some sort; a reconstructed private residence or even a made-over abandoned factory building would be better than no hospital at all.

THE SURVEY OF THE COMMUNITY

All over this country—indeed, all over the world—there are good-hearted, philanthropically inclined people, medical and lay, who are awakening to the fact that their community ought to have a hospital. THE MODERN HOSPITAL has been and is inundated with inquiries from such people as to how they may proceed—first, to develop whether they really need a hospital, and, if so, what kind, and how to go about it.

It seems to us the first question to be settled is whether the community actually does need a hos-

pital, and we have almost answered that question above. If there are two or three thousand people whose interests can be focused at a single point—that is, in a small town, and if there is not a hospital near by that will furnish a workshop for the local physicians and at the same time provide a place in which the sick of that community can be taken care of promptly and efficiently, then that community needs a hospital of its own.

A very superficial inquiry among the medical men of the community would develop the fact as to whether there is enough sickness in the community that would naturally and under favorable circumstances find its way into a hospital. The doctors could go over their visiting list for a year back and pick out from memory the ordinary cases that came under their own care that would have gone to a hospital if such an institution were in existence. Suppose there were 200 of such cases in the course of the year among all the doctors. Are not those enough to satisfy the people of the community that they need a hospital? And let us take, for instance, that figure 200 as the number of sick during the past twelve months who were in need of hospital care and who were compelled to remain at home. It is generally conceded that the average stay of patients in an acute disease hospital is fifteen days. If there were 200 people all told, that would mean that, if there had been a hospital in that locality, there would have been 3,000 days' treatment, or approximately ten patients per day in the hospital. But the hospital habit grows on members of a community and on members of the medical profession, and after a hospital had been in existence for a very short time the community would find, and the medical profession would find, that patients could get so

much better care in the hospital than they could at their own homes that this average of ten patients per day would very rapidly grow to twice the number; and then, too, there are many people in a community who go about with infirmities of one sort or another—bad eyes that need attention, bad tonsils and teeth, diseased skins, chronic rheumatism, or one of a thousand other complaints from which, for want of facilities, they continue to suffer without any attempt to get well—so that, if there were a hospital, those cases would increase the number of patients very considerably. So by easy stages, and following out some of these lines of thought, a community can quite correctly estimate its hospital needs not only for the present, but pretty well into the future.

Then there comes the question of what sort of a hospital does the community need; naturally it must be a general hospital because all kinds of sickness must be cared for. The time has gone by when any hospital, metropolitan or other, can afford to reject certain classes of patients and accept others. People who find their way into a hospital are sick and their illness is not within their control, and a diagnosis is frequently difficult, if not impossible, so that a patient taken in for one disease might easily develop something else in the course of a short time, or perhaps a mistake was made and he did not have that particular disease, but something entirely different. It is unthinkable that a hospital of any sort can accept a patient and then send him home if it transpires that he was not just the sort of case they thought he was. The time is well at hand when it is a hospital's duty to be ready to take care of any kind of a disease that comes along and any kind of a patient; so it would seem that a general hospital would

best fit any community's needs. But each community has a special problem of its own; for instance, it may be a mining district and a good many cases will be male surgical patients, and, if it is a coal mining community, a good many of these patients are going to have their backs broken and are to be long, tiresome, and chronic cases. In such an event the male surgical service would overtop everything else. Another community is made up of milling people, who are constantly getting eye troubles; in that event there would be a very large out-patient department, mostly made up of eye cases, and a great many patients actually in the hospital would be ambulatory patients and not confined to their beds. That would make a difference in the character of the hospital, and the interior arrangements would be somewhat different.

Then, the character of the medical staff would have something to do with the different services. If there was to be an obstetrician on the staff who had a large practice and who was a progressive and capable man, full of energy and activity, and who was growing in popularity, then the hospital would, to serve its own best interests, have to care for his patients and give him efficient service and good facilities, so that adequate care could be taken of maternity women, and that service in the hospital would grow amazingly if such arrangements were satisfactory. And so with any other member of the medical staff, and any other service in the hospital.

THE SUPPORT OF THE HOSPITAL

It isn't every community that needs a hospital that can adequately support even the simplest kind of an institution. There are some communities

so poor that the members cannot even afford a doctor when they are sick—even a doctor whom they do not intend to pay. But the average American community can afford to support a hospital, and the architecture and equipment and general scheme of operation of that hospital will be largely dependent on the ability of the people to pay for it. If it is a poor community, it will be a poor hospital—but better than none.

There are two forms in which money must be provided—one for the building and equipment of the institution and one for its permanent support. Let us think first of the building funds. In a small community that is trying to arrange for a single small hospital to meet the needs of all the people, there is only one scheme by which money can be raised, and that is to go out with a subscription list into the community and get men and women who have money to put down their names for a specific sum, which many times can be divided up into three or four payments, semi-annual or annual, and, if the names on the subscription lists are good, the local bank will advance the money on the deferred payments for a small rate of interest. If the names are not good enough for a bank to accept, then they are not good enough for the hospital itself to count on, and the list will have to be amended and strengthened before building operations can go on. This applies to the building operations and equipment fund, whether it is to be a new hospital or a made-over private residence, and whether the equipment is to be the simplest form or elaborate. A warning right here must be given that a community has no business to ask outside commercial people either to present the institution with a part of the bill for equipment or building material, or to wait for

their money. That isn't business, and it is unfair and unbusinesslike from every conceivable standpoint. If the community, after careful analysis of its resources, thinks it cannot create some sort of a hospital with local funds, and it knows where outside funds can be procured specifically as donations toward a good cause, it has a right to go and get those funds; but the minute that a beginning is made to mix business and charity, financing and philanthropy, just that minute the whole enterprise heads toward disaster.

People can give a good deal more money if it is understood beforehand that they are not going to be asked to give it all at once, and, if the matter is put into such shape that individuals are not compelled to ask for the concession of payments in installments, and it is clearly understood that the installment plan has been definitely fixed as a business proposition, individuals will not hesitate to participate in that sort of subscription, but that all ought to be clearly understood and specifically stated.

FUNDS FOR PERMANENT SUPPORT

Every hospital should be organized and planned with a view to its becoming a self-supporting, hence a self-respecting institution; not that every hospital will be or is asked to be self-supporting, but the scheme of organization should be predicated on self-support, and the funds for support should be arranged for in adequate amounts before the enterprise gets under way, because there is always danger of miscalculating and of planning to do more, and in some cases contracting to do more, than the funds eventually arranged for will permit. The best possible way to achieve this end—that is, the end of self-support—is to plan certain pay accommodations in the hospital, and

the amounts to be charged against each bed and for each service should be fixed and the total amount should be at least 25 percent more than the actual necessities figure up, for the reason that there are bound to be unoccupied beds, slack seasons of work, and some unprofitable adventures. Twenty-five percent ought to give a fairly clear margin in which the hospital may move itself.

Every bed in every small community hospital should have a price and should be charged for; this thing of doing indiscriminate charity work, with no specific funds with which to do it, is wrong and must lead to disaster; not that it is wrong to do charity work—indeed, charity work must be done and will be done—but it should be paid for by funds expressly provided for that purpose. In other words, let us say that we have organized our hospital, planning its fixed charges and with determination to keep within these charges, and then let us say we have it so arranged that 75 percent of the capacity of the house will be adequate to earn the necessary amounts; that would be an excellent plan of organization, and would be the way that a banker or businessman would go at the affairs of his own enterprise. Why cannot he treat the hospital of which he is a trustee, and which he helps to control as a sacred trust, in at least as safe a manner as he would his own business affairs? A superintendent operating such a hospital, so clearly and classically provided for, would always know what to do and could plan ahead. Then, if a fund comes along, given for the purpose of doing charity work, no inroads are made on the income of the institution and no financial legerdemain will be called for to finance the institution. There will

be no deficits at the end of the year, and, most important of all, under such circumstances the good people of the community will become impressed by such methods and they will give more liberally to the institution because they will be quite satisfied that their funds are being properly employed.

THE ORGANIZATION

We have now seen where our building fund, our equipment fund, and our fund for permanent support is to come from. Now let us see how it is to be expended and who is to conduct the affairs of the institution.

Long before we begin to talk about money needed, at the very birth of the thought toward the creation of the hospital, half a dozen or more of the safest, soundest business people of the community should be called together and the plan of him or her who conceived the scheme should be laid before this small group. If there are objections, this is the time to raise them. The whole scheme should be laid out and arranged in a general way. Then the number of organizers should be increased to perhaps fifteen or twenty, among whom there should be a number of the better women of the community, and the greatest care should be exercised in the selection of these women. The care of the sick is woman's business, and the affairs of the hospital are more acutely her concern than the men's, but women are not good financiers in hospital management and too many of them have the unhappy knack of wanting to go to the kitchen to shell peas for dinner, into the linen rooms to direct affairs there, and into every other crack and cranny of the hospital to dip into details, to the great discomfiture of the superintendent, who is paid to do that kind of

work. So that in the early days of the hospital's career the greatest care should be taken to identify women with its active interests who are big enough and broad enough to know where their abilities can be properly exercised, and recognize the dividing line beyond which is the superintendent's exclusive prerogative and duty.

Having got these people together, the survey suggested at the beginning of this paper should be inaugurated and carried out. That would be best done by one accustomed to deal in figures and cold facts, and not one whose sympathies would be exposed to every changing current. In this survey all the possibilities should be developed—whether the community needed the hospital, what kind of an institution was needed, what size, where to be located, the raising of the funds, and the plan of organization. A written report should be made covering all of these phases of the survey, and at this point counsel should be had with an experienced hospital administrator, because at this point an infinitesimal mistake can set the whole enterprise out on a road that will lead it far away from its proper goal.

This group of people can go ahead now on their subscription lists and appoint three committees: a building committee, whose duty it would be to begin the preparation of tentative plans for the building of the hospital, and that committee's work should be based on the survey report finally adopted, which should specifically state all details for that committee to work with, including the size and cost; a finance committee, whose duties it would be to direct and oversee the collection of funds and their proper expenditure; and an organization committee, whose duty it would be to create a completed organization, beginning with

the board of trustees and ending with the downstairs help in the finally completed institution, fixing authorities and responsibilities and duties.

All these committees will be working independently of each other in a measure, but interdependent, also, in a measure; plans for the building, the finances, the scheme of organization, all can go forward happily together, and every so often general meetings of the group should be held and reports should be made to the whole meeting by the various committees, and these reports should be amended and adopted, and should serve as a permanent working basis; notes should be kept of the doings of these meetings by a capable secretary, and at each meeting the notes or minutes of the last meeting should be read and approved—all as a working record.

THE CHARTER

We have seen now the inauguration of the work without any authority whatsoever in law, undertaken and carried out by a group of self-appointed people, and this status must be retained until the funds, at least a sufficient amount to assure the success of the project, are provided. The next step is work for a lawyer—the preparation of the papers for incorporation of the hospital, the securing of a charter from the state and the license from the county, or city, or town. This charter is an important paper, and a fairly workable form of such a document follows:

The object of this corporation is: "To purchase, erect, own, and maintain hospitals and similar institutions for the care of the sick; to teach the science and practice of medicine and surgery, social hygiene, and the most modern methods of restoring and maintaining health and preventing disease; to purchase, erect, own, and maintain laboratories for the discovery of causes of disease and the treatment thereof, including all such research work as may be directed by its

board of directors or governors; to compile, print, and publish books, pamphlets, and public lectures, including the results of such research work as may be undertaken; to receive, manage, invest, care for, and disburse any gifts, donations, or bequests made, appropriated, or set apart to said corporation to promote any or all of the above purposes or for any benevolent purpose designated by the donor or donors; and to do any and all things necessary or incidental to the carrying out and exercise of any or all of the objects aforesaid."

This charter will be asked for in the name of certain commissioners, and these commissioners must meet after the charter is granted and call for an election of trustees. Then comes up the question, who are to vote for these trustees, and the best way to provide for this is by way of the charter as above indicated—that is, an association must be formed, with annual dues, life memberships, and so on. This is a good way to raise money, because each individual who subscribes will have something to say about the institution's activities, and people who are sufficiently interested to give money for a hospital are sufficiently interested also to want to have something to say about its affairs. It can be provided that an annual fee of, say, \$10 will entitle the holder to membership in the association, with one vote, and each \$10 can call for an additional vote if so desired. This offer is some inducement to people to give large amounts, because, if they have only one vote, no matter how much or how little money they give, they are not likely to strain a point in the amount of their gifts.

THE ELECTION OF DIRECTORS

The charter commissioners will call a meeting of these association members or stockholders, and an election will be held for directors, and this election is a very important matter. Too many

directors are unwieldy, and in any event only a very few will be actively engaged in the institution's affairs, and yet, if there are too few directors, it will be more than likely that a cry will be raised in the community before long that the hospital is a trust, in the hands of two or three people; so that some middle ground should be chosen in this matter. A directory made up of twelve or fifteen members is a good, workable one. But these directors should not be chosen to terminate their service all at the same time. If that were done, policies of the institution that had been long prearranged and that were in course of successful carrying out could be changed overnight and the institution thrown on the rocks by a new group of men who had not been sufficiently long in the enterprise to have a proper perspective and the proper attitude toward, and the necessary experience in, its affairs. It is best to elect directors for different terms—say, two go out each year; but this arrangement should be so made that it would take four or five years for a sufficient number of new men to come in to change the policies of the association. Before that time was up the men would have become thoroughly accustomed to their duties, and thoroughly educated and trained, and, if the prevailing policies of the institution were good, they would have come around to their support before there were enough changes to make a difference. Another warning at this point; it is hazardous to elect doctors as members of the board of trustees. Medical men are an integral part of a hospital—its affairs are their business; they are living their very lives there, and consequently their interests will be greater than those of any other factor in the community. Doctors are only human, and, while they give

more to a hospital than anybody else, at the same time the hospital gives more to them also. And if these men are on the directory, it is just a little bit more than fair to expect that they will not use their positions sometimes in their own selfish interests. And whenever a doctor uses the hospital for his own interest, he is unfair to some other doctor, and that other doctor is going to find it out presently, and the situation will breed criticism, discontent, jealousies, and an unhappy state of affairs. Nine-tenths of the friction in the hospitals of this country today is due to the dominating influence in the institution of some member of the medical staff. If all the doctors are treated alike, and if they are kept to a staff of their own, which is the medical staff, and are not permitted under the scheme of organization to have a vote in the directory, and are not permitted to be present at the meetings of the directory, the institution will prosper to a far greater extent.

Necessarily some phases of the creation of this small hospital will overlap, and perhaps a few items suggested in this paper may have to be repeated in subsequent papers, but some of them are so important that repetition should strengthen and not weaken them.

THE SMALL COMMUNITY HOSPITAL—ITS FINANCES.

The Building Fund and How Raised—The Fund for Permanent Support—Essentials for Financial Success—The Whirlwind Campaign—The Value of Accurate Accounting and the Publication of Straightforward Figures.

PAPER II.

IN step with the business methods of our time, hospital administrators and trustees are thinking in terms of system and mathematical accuracy, and they are even attempting to apply the principles of business to their institution operations. While such a motive and such an attempt can be carried too far, and can be hurtful if persisted in beyond a reasonable point, yet it is highly necessary that accuracy and order shall prevail in hospital administration.

Of course, the place to begin is at the very outset of any enterprise, and this is true when a small community hospital is to be thought about, just as it would be true in a great manufacturing organization, and it is quite certain that if we begin right and plan right, and make our financial arrangements properly, and provide against untoward emergencies, we are quite unlikely to get into financial straits and land on financial rocks with an enterprise that primarily and of its own merit ought to have been successful.

There are two hospital funds, and these two

should be kept entirely separate and distinct; one is the construction or building fund, and the other is the fund for permanent support. Last month we pictured the initial proceedings for the creation of a community hospital, the meeting of a group of interested people, their division into committees, the duties of these committees, the creation of the organization, and we led up to the collection of funds, and the question was mooted last month as to the most desirable source or sources of these funds.

In a large community, groups of people having certain interests in common may be appealed to for the creation of hospital funds, but in a small town or in a rural community the whole population must be interested, because otherwise the number of supporters of the institution would be too small; besides that, everybody in a small community needs the service of the one hospital intended to be built, and their influence and support, ever so small, ought to be valuable. That support sometimes might be so small as to be insignificant in the affairs of the institution, but the need of the person making such contribution might be extremely great at almost any time, and there might be embarrassment if he was not in accord with and a participant in the support of the hospital. Therefore, everybody in a small community ought to be interested in the community hospital, and the only way to secure such interest is by personal approach, and, of all methods of approach for the collection of funds, the personal and direct method, made by members of the community itself, is far preferable. There is no way better than to secure the voluntary services of a large number of men and women in the community as members of a subcommittee on finance. In large

cities such a committee would be made up of individuals representing the different lines of business, and to a certain extent this same plan can be followed even in a small town, as, for instance, two or three members of the committee could represent the farmers in the vicinity; two or three other members could represent the merchants in the town; other members could represent the professional people, such as doctors, lawyers, engineers, architects, if these professions are represented; and still other members could represent the wage-earning members of the community who work in the town. Sometimes such a finance committee would better be divided up according to districts, and in that case the members would be selected from the different neighborhoods of the town.

The best plan of all is for the general committee on finance, or the self-appointed group who are taking the initial steps toward the creation of the hospital, to sit down with a list or a census of the population before them. There should be on such a committee all the bankers in the town and some of the merchants, because these men will know the financial standing or rating of the people of the community. The work of this committee should consist of arbitrarily setting down against the name of each head of a family in the community a figure representing the amount of money the committee feel that the person ought to or might be able to contribute. After this list is completed, those whose names are on it should be classified, as, for instance, one list would contain the names of those who might contribute \$5,000 or over; another class would consist of those who might contribute between \$1,000 and \$5,000; another class those who might contribute between

\$500 and \$1,000, and so on down until the \$5 and \$10 contributions were covered in a class of their own. Then the subscription list should be made out to conform with these classifications; in other words, it would be poor policy to allow an individual to present a subscription list to a person who should and would sign for \$50 and then present that same list to someone who ought to give \$1,000. Therefore, it sometimes is a good plan to divide up the finance committee or the collection committee according to the amounts that the members will solicit. For instance, a banker and a doctor and a merchant will take out a list and undertake to see only those who are expected to contribute the largest amounts; another committee would take the next largest, and so on down.

It is a good thing not to mix the two funds, and attempt to collect both or to secure guarantees for both at the same time. The fund for building the hospital is the first fund to be arranged for, and it ought to be cleaned up, so far as the subscription lists are concerned, before the supporting funds are brought up for discussion. Otherwise a donor who was subscribing \$1,000 for the building fund, for instance, would feel himself unable to give that \$1,000 at the outset and then agree to give \$100 a year for ten years; but, after he has already subscribed his \$1,000 and the campaign grows warm for the permanent support of the hospital, it will not be so difficult to get him to make a separate contribution for its permanent support.

There is one more thing about this building fund. There should be no attempt to provide for the immediate collection of the whole fund, but some such arrangement as this might seem advisable; that those who contribute \$50 or less

would be expected to make immediate payment, those who contribute still larger amounts might be given a little longer time and a greater number of payments in which to clean up their indebtedness, but all the contributions should be reducible to negotiable notes, and they should be of such character that the local bank would be willing to discount them at a reasonable rate, so that the hospital could immediately secure its cash fund for building and equipment purposes. If the subscription list is not legally negotiable, then it is not of the right character to permit the hospital board to rely on it. In other words, it would be practically worthless, and the board would have no right to assume the collection of moneys in which the financial people of the town had no confidence.

Up to this time we have been thinking of the work incident to the collection of the funds for the hospital being done by volunteer members of the community, with our mind rather bent on the idea that the women of the community would collect the larger number of subscriptions.

THE WHIRLWIND CAMPAIGN

Of late years another factor has come into hospital activities—viz., the whirlwind campaigner for the raising of hospital funds—and there is a great deal to be said about the whirlwind campaign and about those who are engaged in that business. There is no doubt that one who has been trained by experience in the creation and conduct of a campaign to secure money can do it better, and will get more money promised, than the members of the community itself who have not had such experience; but there is an open question whether the large percentage that these

whirlwind money raisers charge for their work will be an offset to the additional money that they would be able to raise; and yet these campaigners are obliged to charge large percentages for their services; they are obliged to pay a good many expenses, and they indulge in extravagances that the members of the community would not think of, such as the hiring of great numbers of automobiles, the giving of many lunches to many people, and all sorts of campaign dodges to create enthusiasm. Those who are thinking about obtaining their funds by the employment of a whirlwind campaigner ought to be definitely assured as to just what the hospital board is going to be expected to pay. Usually the employed agent charges a percentage for his own work, and out of that he pays no expense, except his own personal bills, and all campaign expenses become an additional tax against the fund proposed to be raised; in other words, if the hospital were going to raise \$100,000 and the paid campaigner charged 15 percent, he would get \$15,000 net, excepting that he would pay his own hotel bill and transportation to and from the town; and if there were lunches to be paid for every day at noon for ten days, and large automobile or carriage bills, and expenses for banners, clerk hire, meeting places, etc., these expenses would have to be paid for by the hospital board in addition to the 15 percent; some campaigners do not charge as much as 15 percent, others charge more, but the amount, whatever it is, added to the necessary expenses of such a campaign means a great deal taken off the fund, which, after all, is contributed by the people of the community.

There is no doubt that some of these whirlwind campaigners are honest, conscientious, painstaking-

ing, and effective agents, and that they have proved satisfactory in many communities, but the reverse is also quite true; therefore, those who are thinking about the collection of funds in that way had better be extremely careful whom they employ and the terms of employment.

One of the most unsatisfactory effects of the whirlwind campaign is the bad taste that it sometimes leaves in the mouth of the community after the campaign is over. Generally speaking, the campaign agent will want to start out with a good number of large contributions ostensibly because of the influence of these contributions at the outset of the campaign. Sometimes the agent wants to be paid his percentage for these contributions, none of which he has had any part in collecting or arranging for, and which have been provided for his use by the hospital board or some of its members. Unless there is a definite and previously arranged agreement about the agent's pay for these early contributions before his campaign opens, they give rise to trouble. Another source of trouble is the character of the campaign sometimes conducted. After the enthusiasm has been worked up to a white-heat, and the volunteer captains and their various crews are out in the field with their subscription lists, many questions will be asked by those who are approached for contributions. One of these questions, and perhaps the most important, concerns the character of the hospital—whether it is to be dominated by a religious sect or fraternal order, or members of some particular nationality transplanted in the community from abroad—and it is so easy to answer such a question according to the wishes of the questioner. If he should happen to be a Protestant, the inclination behind a whirlwind campaign would be likely

to inspire an answer that the hospital was to be a Protestant institution; if he were a Catholic, the person attempting to collect a contribution would be most likely to be sure that the institution was to be conducted as a Catholic hospital, and so on down the long gamut.

Then the question of the permanent board of trustees, the number and character of its membership, would come up for solution in the same way; that is, those asked for subscriptions would want to know who were going to be the members of the board, and it has happened that the person with the subscription list would say, "I don't know, but I will ask," and the person he asks is the active campaign manager, who is working for a fee, and the answer is quite likely to be made just exactly to fit the individual making the inquiry. And many a contribution has been signed to a subscription list predicated on the statement of the person with the list that the prospective donor was slated for membership on the board of trustees. Of course, after the campaign is all over and the enthusiasm has oozed out, this subscriber is likely to wake up and find that it was never the intention to make him a member of the board of trustees, and he, on the other hand, is quite likely to repudiate his subscription—that has happened.

The writer of this paper has been criticised many times for his attitude toward the whirlwind campaigner, and he has been asked repeatedly to make his criticism constructive and not to condemn a system without offering a substitute. Unfortunately, that is exactly the situation. The only substitute that can be suggested for the whirlwind campaigner is the voluntary community itself, unaided by trained direction. Some day, perhaps in the not far distant future, this

question of the raising of funds for hospitals and similar institutions will be settled by the creation of perhaps some national organization employing trained agents, who, under salary from the organization itself, can be sent into the community that wants a hospital and work wholly for the good of the community itself and without reference to any financial interest of their own, because in such a case the hospital board would engage with this corporation to pay a certain fixed sum without reference to the amount of money collected. Such a system would be ideal because it would provide trained aids in a community desiring to raise funds, and there would be no stimulus to improper activities on the part of those engaged to help raise the funds.

Heretofore we have been thinking about the building funds of the hospital. There is not so very much to be said about the fund for its permanent support, excepting this: that the finances of the hospital should be definitely provided for on some reasonably safe basis, so that there would not likely be a regular annual deficit. For instance, if it is to be a 50-bed hospital divided into a small number of private rooms, a few small private wards, and the balance of the beds in larger wards, then every bed in the hospital should have a price set for its occupancy. Then it would be safe to subtract 25 percent from the different classes of beds or rooms or wards for non-occupancy and add up the 75 percent, the total of which would be the maximum on which the hospital could count as its gross income from patients' beds. If it is intended to practice the method of charging for the various services in the hospital, such as special diets, special medicines, laboratory fees, x-ray plates, etc., these will some-

times be sources of income over expenditure, but as a rule such charges cannot be set down as likely to provide any profit for the hospital's operations, at least for some years to come, and indeed the whole practice of these special charges is rapidly and justly becoming obsolete, on the ground that when a patient goes to a hospital he and his physician have a right to expect that that hospital will furnish all of its facilities for the diagnosis and treatment of the disease from which the patient is suffering. Special charges for these facilities have given rise to an immense amount of trouble and dissatisfaction between patients and their hospitals; frequently special charges in such hospitals aggregate more than the room rent, and the sick person who is expected to pay, let us say, \$15 for his bed per week, and had arranged perhaps for that amount, when called on to pay another \$15 or more in the shape of special charges will be very greatly embarrassed, disappointed, and oftentimes angered, and the cure for which he came to the hospital might be seriously impeded and interfered with because of his mental worry.

It is pretty nearly impossible to say, before a hospital is in running order and before its organization and equipment are complete, what it is going to cost to run it, for several reasons. In the first place, very much depends on the character of the medical staff. If the men who are to bring their patients to the institution are not going to have the scientific facilities to which they have been accustomed and which they scientifically know about, they are going to be dissatisfied, and the hospital may lose many patients that are allowed to remain at home that would otherwise have been practically forced by their physicians to go to the institution. Not long ago Bellevue

Hospital, of New York, reported that more than 50 percent of the cases that had come to autopsy in the institution were incorrectly diagnosed. It is impossible, of course, to say how many of those cases might not have come to autopsy if proper diagnosis had been made, but if Bellevue Hospital, with its magnificent group of medical men, failed in more than 50 percent of cases in which the illness was so serious as to cause death, is it likely that the patients in a small community would fare any better, and would not the facilities of a hospital in such a community be of immense service to the medical men, and would not many cases that might otherwise stay at home be sent to the hospital if the physicians knew that they could depend on the facilities for helping them to make a correct diagnosis and giving them proper treatment? But these scientific facilities in a hospital cost money, and the expense must enter into the per capita cost of the patients and bring that per capita up considerably. Then, the overhead expense in a hospital is the largest item, and it makes very little difference if in a 50-bed hospital there happen to be only 35 patients. The expense would be pretty nearly the same as though there were 50 or even overcrowded to 60 patients.

But these contingencies should be taken into account, and some attempt made to average up the probable cost of maintenance of that hospital. This can be done within a fair degree of accuracy, and then the money necessary to meet these expenses should be raised, or the proposed per capita cost, including the overhead expenses of running, should be cut to meet the probable income. For the first year or two there might be a failure to approximate the two accounts—income and expenditure—but after that it would be fairly easy

to "temper the wind to the shorn lamb," so to speak, by cutting the expenditures to meet the income, and then whatever charity work it is intended to do should be done outside of this business organization; in other words, if the hospital is running on an even keel and is barely self-supporting without taking any charity patients, that situation should continue until the income can be brought up or the expense brought down, or until separate funds are provided from some source to take care of any charity work that is wanted to be done.

There is really only one way to raise money for the permanent support of a hospital of the kind that we are just now thinking about, and that is by annual subscriptions from the people in the community who can afford to give for such a purpose; and the best way in the world for a board of trustees to encourage the subscription of funds for the support of the hospital is by presentation of accurate, conservative, and understandable figures to show what the hospital is costing. A paragraph of such a report can tell what the hospital is doing, but the costs must be in figures, and they must be accurate in order to encourage the enthusiasm of people who would be willing to give for hospital purposes if they just knew that their money was to be used properly.

Suppose the hospital were going to cost \$2,000 a month for maintenance. How easy it would be to take that figure and go with it into the community, and how easy the last few hundred dollars would be to get because almost anybody will give a little help to round out a hospital supporting fund.

Of course, the prime necessity in an enterprise of the sort that we are thinking about is a board

of trustees in whose members the community has confidence. The next prime necessity is to conduct the institution so that that confidence can be maintained. We all of us know hospitals in this country situated in comparatively wealthy communities and that have the hardest kind of time to keep going; to their boards of trustees it is inconceivable that anything that they themselves may have done or left undone is responsible for this situation, but, as a matter of fact, the failure of the community to support these hospitals is due to the character of the service that the sick get in them. This writer has seen many institutions that were running behind and in hard financial straits, and whose board of trustees was at its wits' end to account for the lack of interest on the part of the community in the institutions. This writer has seen these hospitals brighten up, pay their debts, and have money in the treasury by the simple process of a reorganization of the personnel in the management, by the introduction of a superintendent who knew what real hospital service was and who gave it to the community. In some cases it took no longer than thirty days for the doctors in the community to know what had happened and for the hospital to fill up with patients. There is another prime necessity concerning the financial stability of a community hospital, and that is the careful keeping of the accounts, but this brings up another topic that will be discussed later on.

Next month we will take up the planning of the small community hospital, the internal arrangements and the reasons therefor, the materials to be used, and the question of costs.

THE SMALL COMMUNITY HOSPITAL—THE PLANNING.

The Survey of the Community—Classes of Patients to Be Cared for—Size of the Hospital—Architectural Division by Sexes and Diseases—The Administrative Space—The Operating Suite.

PAPER III

EACH community has a problem of its own when it approaches the subject of a community hospital, and before any material move is made, excepting the collection of funds and the organization of a temporary board, something of a survey of the community ought to be made to determine the size and character and limitations of the hospital, not only in the first unit to be built, but through a period far into the future. And this survey is practically no different from a survey of that same community that might be made by a business man who was thinking of erecting a store or engaging in any other commercial enterprise. A merchant, thinking about settling there, would want to use his very best judgment as to the future of the town and the surrounding country. He would want to make some calculations as to the character of the future population as well as the present in so far as its spending capacity was concerned. In other words, a store that he would think about opening in a community that was to be made up of the working classes would be far different from that in a sum-

mer resort community made up of well-to-do people on an outing, or a suburban city whose population was largely made up of wealthy people who could afford to live out of the nearby metropolis. In the one place he would think about carrying a stock that would be popular with the working classes, and in the other cases he would think about catering to people who had money to spend for fads and fancies.

In this sort of survey, then, we ought to draw out something of the future of the town, and whether it is likely to grow, and in what directions, not only geographically, but socially and financially. If we have a town that we think has reached its limitations of growth and is to go along in a humdrum sort of way at about the size it now is, then we would think about building a hospital all at once to meet the needs of that small town; but if our survey into the future impresses us with the notion that the town is to grow rapidly, then we should plan for the first unit of a hospital that can be added to from time to time without disturbing the homogeneity and workableness of the institution from the standpoint of economy and efficiency.

Another valuable point in this survey is to determine the probability of our hospital becoming popular outside the narrow limits of the town, and receiving the patronage of the surrounding country; and this part of the survey is really an estimate of the medical profession in the town. If there are wide-awake, well-educated, active, and aggressive medical men in the community—men who would, if they had an opportunity, grow by study and work—then, it seems, we should have an asset, in sizing up our hospital situation, that ought to be taken into account; because there are

very many cases of disease that cannot be considered emergency, and such cases could be taken to a distant city and cared for by skilled physicians. If our own physicians seem to promise, by their enterprising character, that they can attract this class of patients from the surrounding country, then, in determining the size and character of the hospital, we must take this sort of service into account and provide facilities for these men.

The distance to other hospitals in the surrounding country is an important factor—the distance to the nearest metropolis and the character of the transportation facilities to such distant hospitals. The habit of the people of leaning on these other cities and their hospitals is important.

But, over and above all this, the community spirit of the people is to be taken into account. If there is a disposition on the part of the citizens to look elsewhere for whatever they need, if they have no community pride, and if their residence is an enforced one, so to speak, for financial or business reasons, with their minds ever turning to the day in the future when they may move away, that must be taken into account, because in such a community the people will patronize their home hospital only when they are obliged to, and will go elsewhere when they can. A town of a thousand people made up of citizens who have civic pride is worth more as a hospital asset than a town of ten times the number that is made up of people who have no ties in common and no community interests.

Judging, therefore, somewhat after these formulas as to the likelihood of the future growth of the community, and therefore the future prosperity of the community hospital, we will arrive at the size of the institution we want to build,

gauged, also, of course, by the amount of money available for the purpose.

The next thing to determine is the class of patients we expect to take care of, and it goes without saying that in such a hospital as we are thinking about all the sick and hurt of the community must be taken care of, whether the patient be white or black, adult or child, male or female, and no matter what the disease may be—one of the exanthemata, tuberculosis, child-bed fever, erysipelas, or the diseases that come inside the regular services of medicine, surgery, obstetrics, and the specialties, such as ear, nose and throat, mental diseases, or what not. This means that the hospital must be intensely flexible, and must be able to take care at any time of any kind of case that offers itself. But there are some rather fundamental principles and figures that we have to think about in making up a schedule of the percentage of beds for the various classes of patients; for instance, more men go to the hospital when they are sick than women or children, because it is difficult for the mother of the family to take care of her household duties and the children and at the same time nurse the husband, and a grown man is generally too heavy for a lone woman to handle. Moreover, the household is a little less disturbed by the absence of the man during a period of illness than in the case of the wife and mother. The wife and mother puts off going to a hospital until the last moment, and generally will consent to go only under the greatest pressure of the medical attendant and when told that it is absolutely necessary. That spirit is changing somewhat, but it is still there. Women allow their children to go to the hospital with great reluctance; they have a notion that it is

almost abandonment for them to send a sick child away. This idea, too, is passing, but it is there, and in a country town or rural community it is far easier to take care of a sick child in the home than in a tenement district of a metropolis, because there are kind neighbors in the country and in the country town, and because there is plenty of fresh air and sunshine, and at least for sickness there is fresh milk, fresh eggs, and whatever the sick child may need, and the neighbors all flock in to help, so that country doctors are very much less likely to order a sick country child into the hospital than is the case in the tenement district of a large city.

Medical cases can be taken care of in the home better than surgical cases because less technical knowledge is needed, and the mother or wife can usually nurse a sick man where she would not be able to make anything of a surgical dressing; and the same is true, of course, with women and children who need surgical attention. In a good many hospitals more than half the cases are surgery—for this reason and even in a country hospital it seems that nearly half the beds will usually be occupied by surgical cases.

There ought to be a few obstetrical beds, and, if there is a good obstetrician or a physician in whom the women have confidence in that direction, and if the new hospital shall provide correct methods for the care of maternity women, it is very likely that this service will grow rapidly; in some communities it is almost the habit of women to go to the hospital at their lying-in time. This means a labor room, at least one private room for the new mother to lie in quiet for the first twenty-four or forty-eight hours after the birth of her

baby, and it means two or three beds in a ward for convalescent maternity cases.

The rest of the hospital should be so constructed architecturally that most of the beds can be separated from all other patients, even though this separation shall involve the making of very small rooms. Certain eye cases need to be in a dark place, and will not bear the light of the medical or surgical ward; choreas in children need to be isolated from the other children. This isolation can be by high screens if necessary, but at least some provision must be made for it. There should be one or two beds so arranged that mental cases can be temporarily cared for until they can be properly sent to institutions specially designed for them. Any private room whose windows can be barred and doors locked will do for these cases, and this same room will do very nicely to take care of an occasional tuberculosis until some other provision can be made for it. The acute infections, especially the communicable infections, constitute a problem of their own, but, if it is intended that the administration of the new hospital shall be up to the modern mark, this problem will not be difficult of solution. In a large hospital where there are many communicable diseases, the problem of isolation is a difficult one because of the great amount of time involved and the technic necessary, but in a small country hospital that is not likely to have to entertain many of these communicable infections, almost any room will do for them, providing, of course, attention is strictly paid in the administration to the principles of asepsis; but it is far better to have one or two rooms capable of pretty strict physical isolation, and, if these rooms have an opening to the outside in addition to the one on the common corridor, it

will not be difficult to care for even smallpox or diphtheria in them.

Let us take, for instance, a 25-bed hospital and see what we can do about these various services. In the average American rural community with a hospital in its midst, in a town of, say, 3,000 people, it would seem that there ought to be one male surgical ward of, say, four beds and a smaller female surgical ward to take care of, say, two patients. There ought to be two medical wards of approximately the same size, an obstetrical ward of, say, three beds, a children's ward of, say, three beds, and, say, seven private rooms, some of these at least arranged so that they can be pretty well cut off from the rest of the house.

In addition to these rooms for patients, there must be the so-called service rooms, and the number of these and their size will depend a good deal on whether the hospital is one story or two; in the latter case it will be necessary to duplicate somewhat. For instance, if the main kitchen is on the first floor and part of the patients are on the first floor, the main kitchen will probably answer for a diet kitchen, but there should be a small service kitchen upstairs. There will have to be small utility rooms, one on each floor, in which the equipment would be hot and cold water, a slop sink, an instrument sterilizer, and a shelf for bed pans, urinals, and the rubber goods. A general linen closet would be necessary on the first floor and a smaller one upstairs. The medicines can be distributed from the drug room on the main floor, and this need not be a large room. There should be somewhere an x-ray room of pretty large size because, even though there is no money for an x-ray plant at the present moment, the money will come soon from some unexpected

source. There will have to be an office somewhere near the main entrance of the hospital, and a room for the doctors where they can deposit their outer garments, use the telephone, and have consultations. There will need to be a waiting room, and this ought to be somewhere near the front entrance.

There must be a kitchen, with store room, of course, and a dining room. If there can be two dining rooms, one for officers and the nurses and one for the downstairs help, it will be all the better. These dining rooms need not be large, but they ought to be convenient to the kitchen. There should be one room set apart for apparatus and appliances of various sorts—splints, a stretcher, a wheel chair or two, back rests and head rests, and such devices. Then, if possible, there should be another room for surgical supplies, including instruments, dressings, and the stores of gloves, rubber goods, catgut, syringes, and the like. Some of these rooms will do very nicely on the basement floor, provided there can be areaways on the outside, so that large windows can be had. The kitchen, the dining rooms, the x-ray room, the drug room, and the kitchen store room will do well on the basement floor.

Then there is the surgical operating department, and no pressure for space and no attempt to economize financially should interfere with the correct, however modest, arrangement of the operating department. There need be only one operating room, but there should also be a dressing room somewhere in which minor surgery can be done and in which dressings can be applied, and which can be used, in an emergency, for more serious surgery. Some small hospitals think it is quite sufficient if they have an operating room

without any auxiliaries, but this is not enough; the nurses and doctors may scrub up together if economy of space presses, and it is possible to keep the instruments, surgical dressings, anesthetic apparatus, etc., in this room, although it is not advisable to do so. The instrument case ought, in reality, to be in a room without flowing water, because in no other way can they be kept dry and free from rust. There must be some place for making up the drum materials, cleaning the gloves, and preparing the sponges. There should be a small anesthetic room, and this room should have running hot and cold water, and be equipped with a cabinet containing the anesthetic material—ether, chloroform, the masks, etc.—and at the bottom of this cabinet the nitrous oxid and oxygen tanks can be kept. In this room the patient is prepared, shaved, scrubbed, and the field painted; there is a good deal of psychology in this room, because the severity of the operating room can be overcome by having the patient introduced, while awake, to the anesthetic room only, where he or she will see none of the “awful instruments” of surgery.

We need not go into lighting and heating, and ventilation and vacuum cleaning, because these things do not differ in a small hospital from like equipment in a large institution—at least the principles underlying their installations are the same; but there is something to be said about the power plant for a small hospital. It will hardly pay to install a complete power plant in a community hospital of the size and limitations we are thinking about, but there must be a hot water or steam heating system, and this means boilers, preferably two small ones rather than one large one, because occasionally a boiler will get out of

commission and it is well to have a substitute. There can also be operated in this plant a small high-pressure boiler that will take care of the sterilization for the hospital, the coffee and tea urns, and the vegetable cookers. If we attempt to furnish our own lights from such a plant as this, we at once embark on a much more complicated enterprise, and it would seem that the best plan is to buy lighting for a hospital of this size from the public service corporation.

We can conceive a situation in which it would be advisable to have in connection with such a power plant a small ice-making machine that would furnish refrigeration for the kitchen refrigerator and for perhaps one other refrigerator upstairs. It is possible now to buy ice machines of very small units, economical in practice, simple to operate, and profitable in their results—and certainly conducive to comfort and convenience.

Then there is the laundry to think about. The laundry for a 25-bed hospital need not be large. It ought to be prepared to launder at least 500 pieces per day, and it ought to be equipped up to this amount; if possible, the space allotted to the laundry should be much more than necessary for this equipment in order that additional machines may be added with the growth of the institution.

In this discussion we have been thinking about a completed hospital for 25 beds. If it has been decided that the prospective growth of the town will warrant additions and expansion presently, then the architecture of the institution must be predicated on that fact, and consideration must be given to service accommodations for a much larger institution, but it will not be necessary to waste space. We can, in the first unit, so build the hospital that some areas eventually intended for

administration purposes can be used to accommodate patients' beds, the intention being to make slight alterations in these areas when additional building enterprises are under way, and these spaces may then be used for administration.

Each community can take its own problem separately, and from the above suggestions easily figure out the number of cubic feet in the building that it will need, always presupposing that beds should occupy 6-foot centers; in other words, the bed is 3 feet wide, and there should be at least 3 feet between the beds and 3 feet between the end beds and the wall, and there should be at least 800 cubic feet of space in each room for each bed. In private rooms, especially if they are not very well ventilated, there should be more air space than this—1,000 or 1,200 feet.

THE SMALL COMMUNITY HOSPITAL—CONSTRUCTING THE BUILDING.

Materials—Foundation and Basement—Walls—Partitions—Roof—Floors—Ornamentation—Elevators—Refrigeration—Vacuum Cleaning—General Principles—Some Details of Cost.

PAPER IV

WHEN we are called on to write on the subject of the construction of the small community hospital, especially so when a whole type is under consideration, we are confronted with the difficulty of varying conditions in different communities. This is especially so inasmuch as there is a marked dissimilarity in the materials available and the quality and quantity of the labor to be employed. When we think of building a small community hospital, and are advising as to how it should be built and of what materials, we are compelled once again to think of the story of the old negro who was returning from a duck-shooting expedition with his old bored-out muzzle-loading musket on his shoulder, and bending under the weight of great strings of fine ducks. He was met by a city hunter who had also been tramping the marshes in his fancy shooting coat, with magnificent fowling piece, and arrayed like Solomon in all his glory, but bearing as his burden only the few decoys with which he had started out. "Uncle, how did you get all those ducks; did you shoot them on the wing?" the city man

asked. "On de wing, on de haid, on de tail—anyway, jest so I git 'em," was the reply.

And so it is with the building of a small community hospital. If there are sufficient funds available to build the institution as it ought to be built, and out of the best possible materials, from a design made by an experienced and well-equipped architect in this class of buildings, so much the better; but the main point is that every community of 2,000 or 3,000 people or more that is thoroughly imbued with the spirit of American independence and self-respect, and is self-supporting, ought to and can have a community hospital—if for no other reason, as we have stated so often, than that the local medical profession shall have a workshop in which to prepare themselves with the requisite skill and experience to enable them to care for the community sick in time of need; and, even though the hospital should not take care of one single sick person to whom the community was obligated, the hospital, for the former reason, ought and would still be one of the best assets of the community.

We have discussed elsewhere the possibilities of remodeling at a small cost the abandoned residence or factory building or school house to supply temporarily the needs of the people with hospital facilities, and we will therefore not consider this phase of the question at this time.

Let us now think of a small new hospital—say, 25 beds—for which there are available funds, the amount of these depending on the extent and accommodation for the hospital to be erected, and for any future additions which might be added. Unfortunately, in considering the erection of a small community hospital, too often a committee is sent out to investigate hospitals, and the com-

mittee returns filled with the wonderful things it has seen in hospitals which are models in their own ways, but which have all the elements of extravagance without serving their purpose to any better advantage than the character of hospital we are discussing in this paper.

Under ordinary conditions where the demands are not for large specialized departments, this especially so in the administrative department, a 25-bed hospital, constructed as will be described, would not cost to exceed \$25,000 to \$30,000 where the proportion of wards and private rooms is in accordance with the modern needs. The addition of specialized departments and many private bath rooms and luxurious trimmings of one kind or another would necessarily make such hospitals cost infinitely more.

In the hospital described in this paper we are considering the bare needs of a first-class institution. Necessarily, all ornamentation and decoration must be eliminated, and a building erected in which we can install all the necessary facilities with which to care for the sick in line with modern medical demands.

THE FOUNDATION AND BASEMENT.—There is nothing better and nothing cheaper for the basement and foundation of such a building than concrete; it is serviceable, durable, looks well, and wears as well after many years as when it is first put in. This applies also to the basement floor of such a building.

Due to the unprecedented rise in the cost of some of the necessary products which are used in fireproof buildings, newer and cheaper methods have come into vogue, and after a careful investigation we think that the so-called reinforced skeleton construction, where all supporting mem-

bers of the building and all floors of the building are built of concrete with deformed steel rods, properly designed for the respective loadings, has the preference.

For the purpose of this paper we will call this the structure which in any case would be practically of uniform design for all such buildings, and, for the further purpose of the discussion, we will call all other portions of the building the externalization, by which is meant that portion of the building which incloses the structure.

THE WALLS.—There are several methods in which such an exterior could be constructed. First, these curtain walls, as they are called, can be made wholly of the hard-burned hollow clay tile. This can be obtained with glazed exterior surface, and, when stone is used in conjunction with this material, it can be left in the form in which it is laid, and makes a very beautiful and sightly wall, which can be plastered directly on the inside of the tile.

A second method is to make the entire exterior wall of a brick veneer, backed up with hollow tile of the same character of 8-inch thickness, making in all a 12-inch wall, the plaster being placed on the interior of the building directly upon the tile as in the first instance. Or, the entire wall can be made of a so-called 12-inch solid brick, in which case a 4-inch hollow brick should be used for the inside course, which will also directly receive the plaster.

The matter of ornamentation is one which necessarily must be left to the amount of funds available and to the architect's and committee's wishes in this matter. Stone, terra-cotta, and even cement may be used for such ornamentation. Cornices and ornamental courses can be cheap-

ened considerably by using galvanized iron, but, if it is used, it will require the same care that wood would exact for the same purpose—i. e., frequent painting.

Another method of treating the building would be to make the curtain walls entirely of hard burned tile, putting a stucco exterior directly on these tile. There are other methods of building by using the interior structure of reinforced concrete, and making the exterior walls entirely of masonry, but this means a somewhat larger building, due to the increased thickness of walls in the lower stories.

In keeping with the fireproof character of structure, the floors should be made of concrete joist construction in which hollow tile are laid on wood staging, spaced 4 inches apart, and in these spaces are to be laid the necessary reinforcing steel and concrete poured into the spaces and over the top of the tile, the depth over the top of the tile to be at least 2 inches.

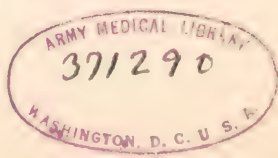
The roof of such a building can be made either with the same construction as the floors and furred up with cinders to obtain the proper pitch to the rainwater leaders, or else the upper floor can be placed in such manner that a slope is formed in the roof slab, and a suspended ceiling of expanded metal hung from this, on which the plaster is placed. If the money is not available for either one of these forms of construction, the ordinary joist construction can be used for ceiling and roof, and the roof covered with one of the so-called plastic roofings of pitch and felt, or asbestos and felt.

WINDOWS, FRAMES AND SASH.—Door frames and doors can be made of metal. While it is not so necessary to have the windows of metal—nor,

for that matter, the doors—the frames for these doors should in all instances be of metal, inasmuch as they are much more rigid and serviceable than the wood frames, and will stand the strain of swinging doors without cracking the plaster, as is the case with wood frames and trim. The doors themselves can be of the flat slab type, and, if they must be fireproof, there are now in the market doors approved by the National Board of Fire Underwriters which are made entirely of wood, with asbestos layers under the veneers.

PARTITIONS.—The interior partitions can be made either of hard-burned hollow tile, gypsum, or metal studs, with plaster board. Any of these are acceptable. The laboratory of the National Board of Fire Underwriters had an exhaustive test made some two or three years ago, and found that steam or water played on the hot clay tile would break the tile and thus quickly make an opening into the next room, and the board found that gypsum blocks were to a very far greater extent fireproof than the tile, that steam or water played on the hot block would chip off an egg shell coat, and the continuous spray would keep on chipping off these infinitely thin scales until after a long time the gypsum block was worn down thin enough for the water pressure to break it through; but by this time it had served its purpose as a thorough fire retardant, and had permitted the fire to be extinguished.

The metal stud and plaster board partition has been found to be an exceedingly good fire-retardant of the same character as the gypsum block, but it is somewhat more expensive to erect than the gypsum block partition. Inasmuch as the entire structure would be of the reinforced concrete type as described, and there is no direct



bearing load on any of these partitions, the lighter, more soundproof and more fire-retardant partition made of gypsum is probably more adaptable to this character of building. There is only one objection to this class of partition—namely, that it will not bear the weight of wall plumbing fixtures, sterilizers, or heavy shelving as well as the hard-burned clay block, but this can be overcome by bolting through under the plaster with the proper hangers and bolts. Moreover, most plumbing wall fixtures are now made to have their entire weight rest on the plumbing stacks. One great advantage of the gypsum block is that it is made of the same material as the plaster placed upon it, and makes a homogeneous partition.

FLOORS.—Floors in hospitals may be put under three classifications: first, wood or parquetry floors; second, mastic floors, in which are included all molded materials, such as terrazzo, magnesium chloride, and those made of plastic materials, such as asphalts and elaterites; third, prepared floorings, which are laid directly on the cement with plastic compounds, in which are included linoleum, cork tile, and the many forms of art tile. While marble floors might be considered under this heading, they are not adaptable to hospital purposes except for ornamentation.

The above are again subject to classification under each heading. Wood floors are almost obsolete in wards and patients' rooms, because, after they are dried out, large cracks open up which can easily harbor microorganisms and interfere with aseptic conditions in the hospital. Further, they require continual care. Of the second classification, one of the most satisfactory floors is the terrazzo floor, laid either directly on the rough floors or laid in cement in the hexagonal blocks of

12-inch dimension. The latter has the advantage over the former of being much more easily repaired, inasmuch as even the best terrazzo floors, with the settling and shrinkage which occurs in almost all buildings, will crack, and up to the present time there has been no method devised of repairing these monolithic floors without showing such patches. These terrazzo floors have the disadvantage of being hard and having no resiliency. Even with such floors installed, it is necessary, especially in the corridors, to put down continuous rubber matting or linoleum for the purpose of quietness and to prevent the ills due to continuous walking, such as nurses are called on to do, upon such hard surfaces.

In the judgment of the author there is no flooring within the financial reach of the average small hospital that compares to a good grade of battleship linoleum, properly seasoned before laying, and laid properly by people who make that a business. This linoleum comes in three forms of acceptable type—one is the uncolored terra-cotta; another is an olive green, which is made up with a coloring matter, and which will eventually fade; and the third is the so-called marbleized linoleum. This comes in $\frac{1}{8}$ -inch thickness, whereas the other two are $\frac{1}{4}$ -inch thick. The marbleized linoleum is very pretty and desirable for private rooms and for wards when it can be afforded.

Most of the corridors in these small hospitals will be 6 or 7 feet wide. The ordinary battleship linoleum comes in 6-foot widths, and will just fit a 6-foot corridor. If the corridor is 7 feet, the turned cove base projecting 2 inches beyond the wall line, a 4-inch strip either of the same material, but of a different color from the cove base or another color linoleum, can be run along these

4 inches, and the 6-foot space filled with the terracotta linoleum. Some hospitals use terrazzo cove base and the same material laid plastic for the floors.

In service rooms, store rooms, diet kitchens, and toilet rooms, terrazzo is admirable. The best floor under all circumstances is either the compressed cork in small squares or the so-called cork linoleum floors, either in the small squares or in figured form. These cork tile can be obtained in a great variety of colors and are practically indestructible. If perchance an accident should happen to some of these tiles, they are very readily removed and new ones put into their place. Under continuous wear for years, they practically show no variation in thickness. The objection to these floors is merely one of cost, inasmuch as in a hospital of the size and character under consideration such floors would cost practically 15 per cent of the entire cost of the building. The so-called plastic floors made of elaterite have the one vital objection of being obtainable only in dark brown or light red and gradations of shades between these two. They are laid directly on the concrete slabs and are of $\frac{1}{8}$ -inch thickness, and are not only soft to the tread, but are thoroughly impervious and sanitary. They are not adaptable to main kitchens or laundries where considerable grease is liable to drop on them. Aside from their color, they are one of the most serviceable floors that can be obtained, and one great advantage in their favor is that they are exceedingly reasonable in cost. A comparative list of cost of the above floors is given herewith:

Wood floors, laid complete, cost about 15-16 cents per square foot. Parquetry floors, depend-

ing on design, 30-50 cents per square foot, laid complete.

Second class.—Terrazzo floors of the monolithic type, without base, 20-25 cents per square foot. Terrazzo floors, block type, 25-30 cents per square foot.

Third class.—Cork tile, 50-60 cents per square foot. Cork linoleum type, 45-50 cents per square foot. Battleship linoleum, $\frac{1}{4}$ inch thick, 20 cents per square foot. Battleship linoleum, $\frac{1}{8}$ inch thick, 18 cents per square foot. Mastic floors (elaterite), 15-18 cents per square foot.

Floors for operating rooms may be one of the softer materials, perfectly red in color, or of terrazzo, either plastic laid or in the slabs; or, for those who are still committed to the "all white," vitrified clay tile, 3 inches in diameter, hexagonal in shape, or 6 inches square. These tiles are white or light gray, and, though they darken with age, they are easily cleaned. All of these floors should be laid to a cove base. There are now on the market cove bases made of metal, which are less expensive than any other form of base. They can be placed complete in a hospital, so that the plaster of the wall and the floor line is complete with their upper and lower edges, making practically a continuous surface from floor to wall, at less cost than even an ordinary cement base. When painted a somewhat different color than the walls, even to simulate the color of the floor, they are not only sanitary, but very sightly. Necessarily the price of all floors would depend somewhat on the locality in which they are laid. It is obvious that a good floor must be laid by experienced men, and, if the small community is at a distance from a large city, the matter of expense of sending ex-

perienced men to do the work would necessarily add to the cost of all floors. The matter of wall covering, particularly that for toilet rooms, operating rooms, and working departments of this character, is one which must be treated from the point of view of the means at hand. A wall well plastered with hard finish, properly treated and enameled, will serve the same purpose as wood, expensive wainscots of glass or marble, or even tile. The latter are desirable to some extent, but do not serve their purpose any better than the former.

The decoration of the hospital is one which must be left entirely to the authorities of such institutions and the amount of money which they wish to spend. If the hospital is to be decorated immediately, it should be done with one of the so-called cement coatings, which can be applied in two coats to both the woodwork and the plastic walls. This material is not only sanitary, but is washable, and makes an admirable undercoating for any decorative scheme which it is decided to adopt at a later date. Until the hospital has thoroughly weathered and assumed its ultimate position in the matter of settlement, the most economical wall decoration should be used. At least one and preferably two winters should pass before the permanent decorations are put into the building, so that the difference in temperature between the inside dry heat of the winter and the outside dampness of the open window period will have caused the final settling of all of the thousand component parts which go to make up the structure and which cause the small and often larger cracks in the building.

THE ELEVATOR.—As it is always a difficult thing to get patients up and down stairs, if it is

possible to have a push-button electrically operated elevator, sufficiently large to contain a stretcher or cot, it will be a great convenience, and this elevator in such a case will run from the basement up to the second floor, which is usually the top of the house in a small hospital, and in that case the same elevator can be used for any purposes of transportation, especially to carry visitors and nurses and doctors up and down. There is a tendency too often to use this one elevator for conveying soiled laundry and garbage, and this custom is in violation of good hospital practice and ought not to be countenanced. An elevator will cost about \$3,000, but it will pay for itself in convenience in a short time. If the funds are not available for this class of elevator, one of the lever-type elevators, operated from the inside of the car, may be installed at less money.

Dumbwaiters may be simple or complex, but there certainly should be at least one in even the smallest hospital to convey foods, drugs, and other light articles up and down to save running the stairs. There are very good hand-operated dumbwaiters that have compensating devices to regulate the weights, and these do very well if properly installed by reliable manufacturers. Then there are the electrically operated dumbwaiters, with necessary safety devices to make accidents practically impossible. Where the hospital can afford it, these dumbwaiters are worth while, but they are necessarily expensive, comparatively, costing from \$1,000 to \$1,500, and require current for their operation.

VACUUM CLEANING.—As yet vacuum cleaning as a hospital routine is a mooted question. There is no possible doubt that the vacuum cleaner will

keep the hospital far cleaner than it otherwise would be, because it will remove dust not only from the place where it has settled, but takes it out of the hospital entirely, so that the dust will not have to be chased from place to place, as it has to be with brushes and dusters; but it might be just as well understood first as last that a vacuum cleaner is not going to save the hospital any money, because every process of cleaning that is done by the vacuum cleaner must be done otherwise also, and it may also just as well be understood that the vacuum cleaner of today has its limitations. It will not pick up mud from the floors and it will not take soot from the walls; however, the tools for vacuum cleaning have been greatly improved in recent years and will do things now that were impossible a few years ago. For instance, there is a tool to go into the radiators and suck dust out from the sections; there is another tool that can go into corners, both of floors and walls, and there is even a tool shod with a soft material that will permit the cleaning of furniture without scratching it. The main use of the vacuum cleaner in hospitals, however, is to clean the rugs on the floors and to clean the dust from the floors and walls and ceilings, and to pull the dust out of the mattresses and whatever upholstered furniture there is. One may install a vacuum cleaner for almost any price, from a few dollars up to thousands. The portable cleaners that are taken into rooms and wards are not desirable in hospitals; they make too much noise. In new hospitals vacuum cleaner pipes may be run up the pipe shafts along with other piping, with outlets on each floor. In hospitals already built the piping may be run up the elevator shaft and outlets drawn through the walls on each floor. This is a

very good method in hospitals that are already built. This piping may be done by the average hospital engineer, and is not an intricate process. In a certain hospital, where there are three elevator shafts in different parts of the building, piping was run up each shaft and carried along the ceiling of the basement floor to a common point where a vacuum cleaning machine was installed. Manufacturers had asked from \$1,800 to \$3,000 to install a vacuum cleaning system. The piping was installed eventually by the hospital engineer at a total cost of approximately \$200, the machine cost \$300, making a total outlay of little more than \$500 for the complete equipment, and this was a hospital 300 feet long, of seven floors. A hospital that contemplates putting in a vacuum cleaning system should select very carefully, because there is a vast difference between the products of different manufacturers. Some of them are very much in advance of others.

Refrigeration in the small hospital has been recently standardized so as to eliminate what has heretofore been apparently insurmountable. There has always been a question as to the economy of refrigerating apparatus in the smaller institutions. It was a problem how the small institution could afford to operate a refrigerating plant. This point is now satisfactorily settled. The manufacturers of the carbon dioxide machines, using a circulating system of calcium chloride brine for cooling the boxes and making ice, have perfected small unit machines for installation and operation in very small institutions, and at prices that such institutions could afford to pay. The great advantage of refrigeration is the ease with which temperatures can be maintained evenly at all times without the necessary

noise and muss accompanying the ordinary icing methods. Some quantities can be made readily for ice packs, and, when this ice is broken and put into cans and placed in the cooled chamber of the refrigerator in the diet kitchen, the ice will last practically indefinitely. One of the principal points to be taken into consideration in refrigeration is that it is a dry process, and, in consequence of this, quantity supplies can be purchased at wholesale rates and kept indefinitely, whereas with the moist system of melting ice to maintain temperature, in such boxes meats and vegetables spoil very quickly, due to the moisture which hastens decay. Further than this, lower temperature can be maintained with artificial refrigeration than can be with ice. An installation of this character should be so designed that the brine which is circulated to maintain the temperatures in the refrigerators, which circulation is done by a small pump in such manner that the compressor—or, in other words, the machine which makes the brine cold—should be operated only for the minimum length of time; and, if the installation is so proportioned that this can be done, then the compressor or larger machine needs to run only for a short space of time in the morning and in the evening. In the refrigeration installation the machinery is located in the basement.

We have now suggested some of the materials that go to make up an ideal modern small community hospital. Many of these institutions will not be able to afford a good many of these materials and some of these modern conveniences, but the problems ought to be met frankly and fairly in each hospital. There is the question, for instance, of fire protection; but the question of fire protection is no more important than the problem of

asepsis and disinfection and cleanliness of the premises.

FIRE PROTECTION AND ASEPSIS.—Fire protection involves the use of fireproof materials that will permit the cleaning of every crack and crevice of the institution. Some hospitals will not be able to afford one any more than another of such materials, but always, in planning a new hospital or in altering an old building for hospital purposes, the board of trustees and the architect and the superintendent of the institution must take these items into consideration and give them their proper weights in the final selection. If it is decided eventually that a fireproof hospital cannot be afforded, and thus proper protection given to patients, then the other horn of the dilemma must be chosen, and such exits and points of egress must be found as will permit the removal of patients on the shortest notice; and more than one exit must always be available, and these exits must be of such character that bed-ridden patients can be handled through them on stretchers or cots, or otherwise. Large balconies, with direct egress and stairs to the ground, should be provided, so that patients may be taken from the building as quickly as possible and from these safety balconies to the ground. These balconies make admirable sun and sleeping porches at the same time.

This same kind of solution of the problem of asepsis and disinfection is always possible. If wood floors must be used and acute corners, then the floors must be properly treated, so that they will offer the least inviting residence for micro-organisms. Square corners must be sealed, and capable of being reached by cleaning brushes and cleaning solutions, and it must be thoroughly understood that it will cost more to keep such a hos-

pital clean than one that is properly built along modern lines. In other words, somebody will have to work harder or more people will have to be employed to do the work in a hospital that does not contain modern conveniences and is not a modern structure. In a final analysis, the more expensive architecture and the completer conveniences will pay; they will pay in reduced cost of upkeep over a long period of years and they will pay by reducing the pay roll of employees.

In presenting the above it is not the object to urge its consideration where the community's finances will not permit of the construction of such buildings, and it is not our object to discourage communities from proceeding with the construction of the best hospital the community can afford. As we said at the outset, the main point is to get a hospital; every effort should be made to get the right sort of hospital, but get your hospital, and conduct it in such a way that the community will soon realize its value, and it can be safely promised that a hospital properly conducted need not want for funds for its maintenance in any community in this country. If such a hospital is poor and without funds for its proper conduct, the fault lies at somebody's door. Generally speaking, financial stress in these small hospitals is due to want of two things—want of confidence on the part of the community because of the character of the work done in the institution, or because the hospital is badly managed on its physical and psychical sides.

THE SMALL COMMUNITY HOSPITAL—THE INTERIOR ARRANGEMENT.

**Most Community Institutions Must Be Planned
for Future Expansion—Some Principles of In-
terior Arrangement Illustrated—Cost Discussed
—Economies Possible in Concentrated Plan.**

PAPER V

A NNOUNCEMENT was made last month that the next paper in this series would concern the organization of the small hospital. During the month, however, persistent appeal has been made for another article on the architecture of the small hospital, this time including rather the interior arrangement, the last article having been devoted to materials for construction. And it seems that this should be so, because very much space is being wasted in most of the new small hospitals that are going up, and many necessary units or working places are being omitted; so that this month we shall discuss the interior arrangements of the small community hospital, and, in order that the discussion may take on a helpful and, as it were, clinical aspect, we are using as the basis for discussion an ideal plan of a hospital to provide for twenty or perhaps twenty-four patients, and to be the first unit of a building that can be added to from time to time without disturbing its homogeneity or architectural form. We have purposely omitted scales on the drawings for this hospital because we do not agree with Sir Henry Bur-

dett, of London, that hospital plans are useless unless drawn to scale.

There are some pretty definite figures for hospital construction in this country; for instance, our beds are approximately 3 feet wide and 6 feet 6 inches long, and there must be working space between them of at least 3 feet. The head of the bed should stand away from the wall at least 18 inches, and the beds at the ends should leave working space next to the walls. It makes not quite so much difference as to the width of the aisle between the feet of the bed, so that carts and wheel chairs and perhaps two persons abreast can traverse them.

Our serving rooms or diet kitchens, where they are intended to serve one floor or one unit only, should be large enough to contain a small ice box or refrigerator, a cabinet on the wall for dishes, a steam table—say, 2 by 4 feet—a small serving table—say 3 by 4 feet—and a sink, with drain board, and space for a hot plate, either gas or electricity.

Our utility rooms must contain a slop sink, a utensil sterilizer, a wall cabinet for bed pans, urinals and rubber nursing goods, and a table on which work can be done.

Our bath and toilet rooms must be large enough to contain two toilets, with separate door for each, a lavatory, and a separate compartment for the bath; and such a bath room should be large enough to contain a tub 5½ or 6 feet, set into the walls on three sides, with space enough on the fourth side for the bather to undress and dress. It is always understood that the toilets in these rooms are at the windows because they need ventilation, and the baths toward the corridor because direct, close ventilation is not so necessary.

The dimensions of the operating room are rather elastic, and will depend in large measure on the wishes and technic of the surgeons. Some operators and some hospitals use very little furniture, nearly all the paraphernalia being kept in an adjacent room, leaving the operating room itself entirely bare, except for the table and anesthesiologist's stool. In these hospitals a scrub sink is the only other furniture. In other hospitals and for other surgeons a room full of furniture is required—the table, the anesthesiologist's stool, revolving solution basins with arm dip, table for instruments, the drum stand, a goose-neck floor lamp, cautery apparatus, a scrub sink, and slop sink. The dimensions of the operating room must be predicated on the wishes of the surgeons in these respects. But it is very highly necessary to have certain auxiliary rooms as a part of the operating department—an anesthetic room, which may be used likewise as a preparation room; there must be a nurses' work room, large enough to hold a good-sized table, or even two tables, and a wall cabinet for supplies. Sometimes the instruments are kept in this room, but it is not an ideal arrangement because there is running hot and cold water in this room, and vapors are likely to settle on the instruments and tarnish the metal. Instruments should be kept dry, and, therefore, it will be better if they are kept in a room without running water and in a case with a good lock, and with glass on three sides and glass shelving.

In thinking about this small hospital, we are looking forward to a time when additions will be required, and it should be possible to so build this first unit that a second and even a third can be added without disturbing any part of what has

already been built, and without tearing out any partitions.

In the plan shown, the location of the kitchen in the basement is not ideal in its relations to the dining rooms, which are across the corridor, but provision is made between the nurses' and officers' dining room and the dining room for the help for a service room, to which a portable cart may be wheeled, and from which either or both dining rooms may be served. The arrangement shown makes possible a large refrigerator, with a high ice hole at the top, through which ice may be furnished from the rear of the building.

It will be noted that ventilation is secured through the corridors from end to end of the building, and, when a second and third addition is made, this same through ventilation is easily arranged.

This building faces to the north, and on the second floor, with northern exposure, is shown the operating suite, with one large operating room and with one or two other rooms, called by different names, that can be used for dressings or for emergency operations when more than one surgeon wants to operate at the same time. It will be noted that we have left a sort of circular or octagonal corridor in this operating suite; later on, when it becomes necessary to add a wing at this end of the building, the partitions can be changed at this point and the whole straightened out with very little expense, and thus the corridor continued through into the new wing, and the present operating room can then be taken, if desired, for an obstetrical room and one of the present auxiliary rooms can be turned into a nursery. During the occupancy of this first unit as a complete hospital, some of the rooms about the

entrance of the building will be used for patients, and afterward they can be given over to a separate office for the superintendent, a doctor's examination room and the like, or any other administrative use can be made of them that seems desirable.

In order that architects and trustees and superintendents may avail themselves of the principles attempted to be illustrated in these drawings, a somewhat more detailed description of this little building follows:

This hospital will furnish accommodations for two 4-bed wards, two 2-bed wards, and four private rooms, making a total of 16 beds. In case the private rooms are used as 2-bed wards, it would give 4 additional beds, making 20 in all, and the 4-bed wards may take 6 beds, making in that case a hospital of 24 beds.

Assume that the hospital has a fair-sized lot, with a south frontage on a street, this frontage to be 200 feet wide and 180 feet deep, preferably a corner lot. The lot plan shows a small hospital, 86 feet long and 40 feet wide, located so as to have ample room for future additions and still have plenty of light and air when all the buildings are up. The hospital, as indicated by No. 1, would be placed in the center of the lot and 40 feet from the south lot line. The first addition would be indicated by unit No. 2, placed 10 feet from the west lot line and 20 feet from the south lot line, extending back within 5 feet of the north lot line, with corridor joining that of the present building. The power house would be located in the center at the rear of lot, 5 feet from the north lot line, as indicated by unit No. 3, and connected to the hospital by a tunnel, as shown by unit No. 4. The power house would have the boiler room in the

basement and the laundry on the first floor, and could be built whenever desired without any inconvenience to the hospital. The third addition would be indicated by unit No. 5, placed 10 feet from the east lot line and 20 feet from the south lot line, extending back within 5 feet of the north lot line, with connecting corridor to the present building. A part or all of either unit No. 2 or No. 5 could be built at one time, to meet the requirements of the hospital. The permanent operating department should be located in the north end of unit No. 2, so that there would not be any interference with the present operating department when unit No. 5 is built.

The hospital as shown, built of fireproof construction, having concrete foundations, hollow tile walls stuccoed on the exterior, column and floor construction of reinforced concrete, tar and gravel roof, wood door and window frames, wood sash and doors, gypsum partitions, cement floors in basement, linoleum floors on first and second floors, except in the operating department, which would have terrazzo floors, electric wiring, plumbing, heating, dumbwaiter, and elevator, would cost about \$35,000.

The hospital as shown, built practically the same as above, except the floors would be of wood joist construction, partitions of wood studs, with wood lath and plaster, would cost about \$25,000.

Both of these estimates would necessarily depend on the location and local conditions, and therefore are approximate only.

BASEMENT FLOOR

The main kitchen No. 1 is connected directly to the dumbwaiter No. 3, which serves the diet kitchens on the first and second floors. The vege-

tables and meats would be prepared in room No. 2, so that the main kitchen can be kept as clean as possible. This room is provided with a large built-in refrigerator as shown by No. 5, which is iced from the outside of the building. Hall No. 4 is provided so that dumbwaiter may be used from the hall side without entering the kitchen. Grade entrance is provided at No. 6. The elevator machine will be placed in a room directly under stair landing No. 7, with entrance through hall No. 8.

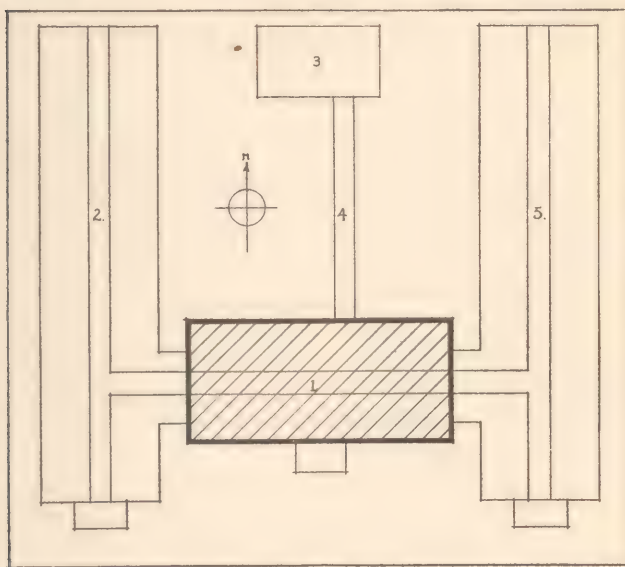


Fig. 1. Lot plan.

Ambulance entrance to elevator is shown at No. 10. Morgue No. 14 is entered only through elevator hall No. 12. Soiled clothes closet No. 13 is directly under the clothes chute No. 11 on the first and second floors. Boiler room No. 17 is entered from the inside of the hospital through hall No. 15, and from the outside by grade en-

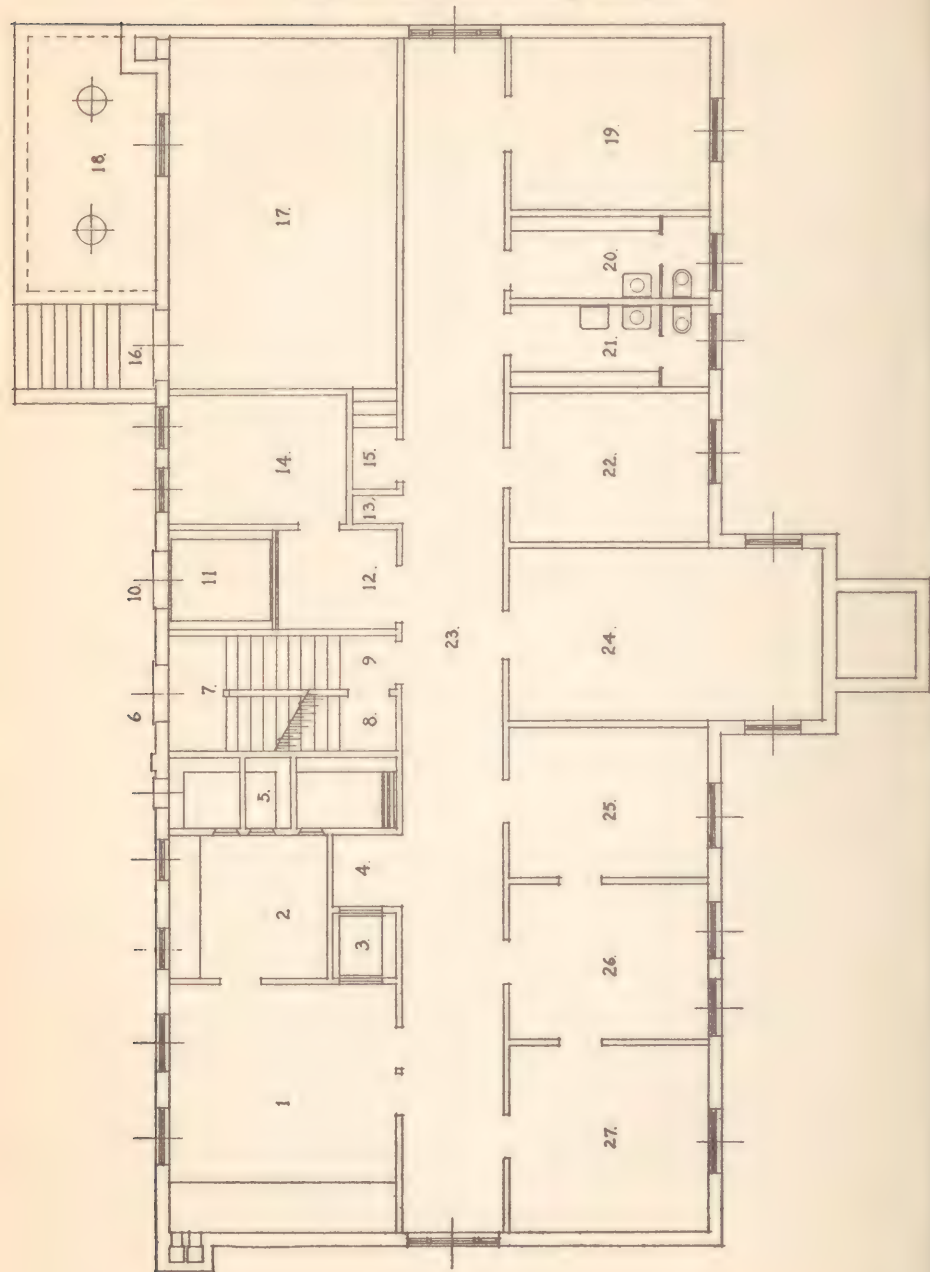


Fig. 2. Basement floor plan.

Fig. 2. Basement floor plan.

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| 1. Main kitchen. | 15. Hall to boiler room. |
| 2. Vegetable and meat preparation room. | 16. Exterior entrance to boiler room. |
| 3. Dumbwaiter. | 17. Boiler room. |
| 4. Hall. | 18. Coal room. |
| 5. Large built-in refrigerator. | 19. X-ray room. |
| 6. Grade entrance. | 20. Male help's toilet and locker room. |
| 7. Stair landing. | 21. Female help's toilet and locker room. |
| 8. Hall to elevator machine room. | 22. Drug supply room. |
| 9. Stair hall. | 23. Corridor. |
| 10. Ambulance entrance to elevator. | 24. Kitchen stores. |
| 11. Elevator. | 25. Help's dining room. |
| 12. Elevator hall. | 26. Serving and dishwashing room. |
| 13. Clothes chute. | 27. Nurses' dining room. |
| 14. Morgue. | |

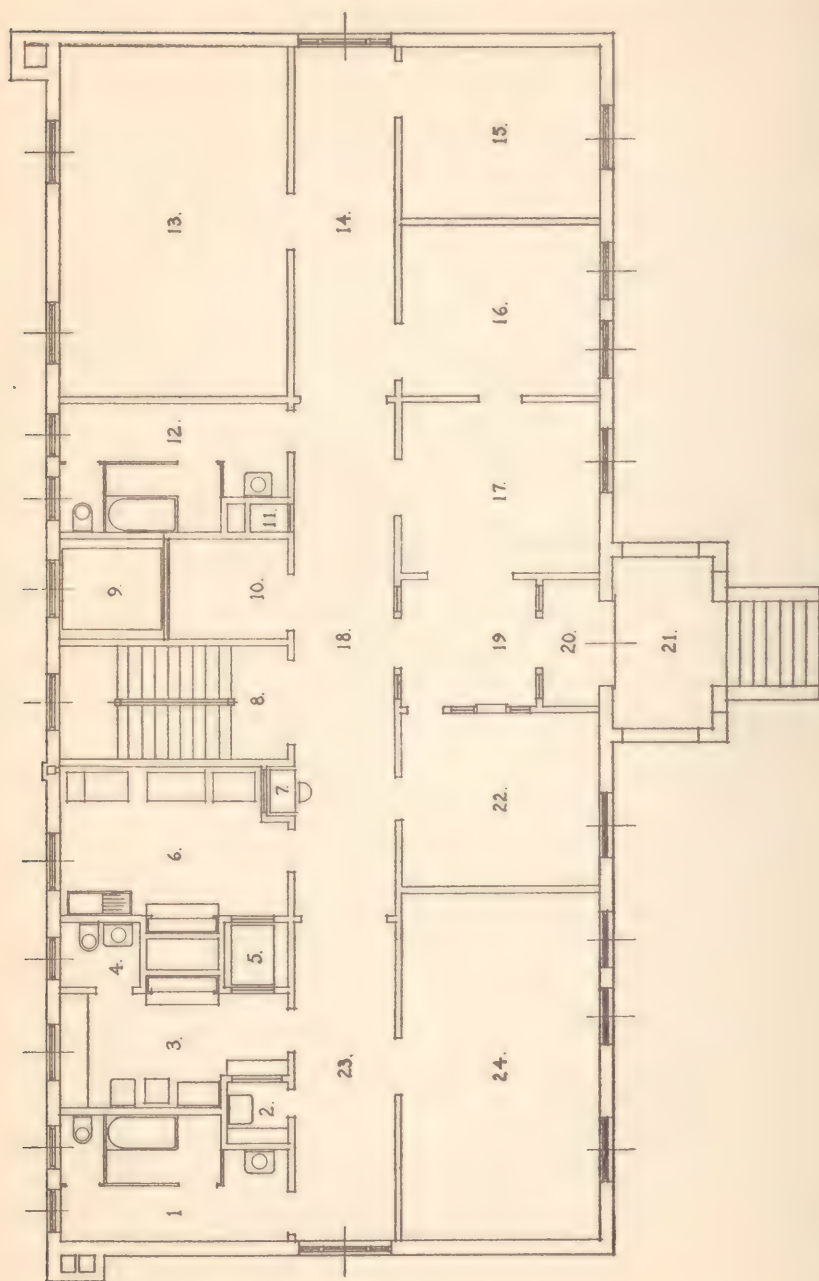


Fig. 8. First floor plan.

Fig. 3. First floor plan.

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|---------------------------|----------------------------------|
| 1. Toilet and bath room. | 13. 4-bed ward. |
| 2. Porter's room. | 14. Male patients' department. |
| 3. Utility room. | 15. 2-bed ward. |
| 4. Nurses' toilet room. | 16. 2-bed ward. |
| 5. Dumbwaiter. | 17. Reception room. |
| 6. Diet kitchen. | 18. Corridor. |
| 7. Nurse's station. | 19. Lobby. |
| 8. Stair hall. | 20. Vestibule. |
| 9. Elevator. | 21. Front porch. |
| 10. Elevator hall. | 22. Office. |
| 11. Clothes chute. | 23. Female patients' department. |
| 12. Toilet and bath room. | 24. 4-bed ward. |

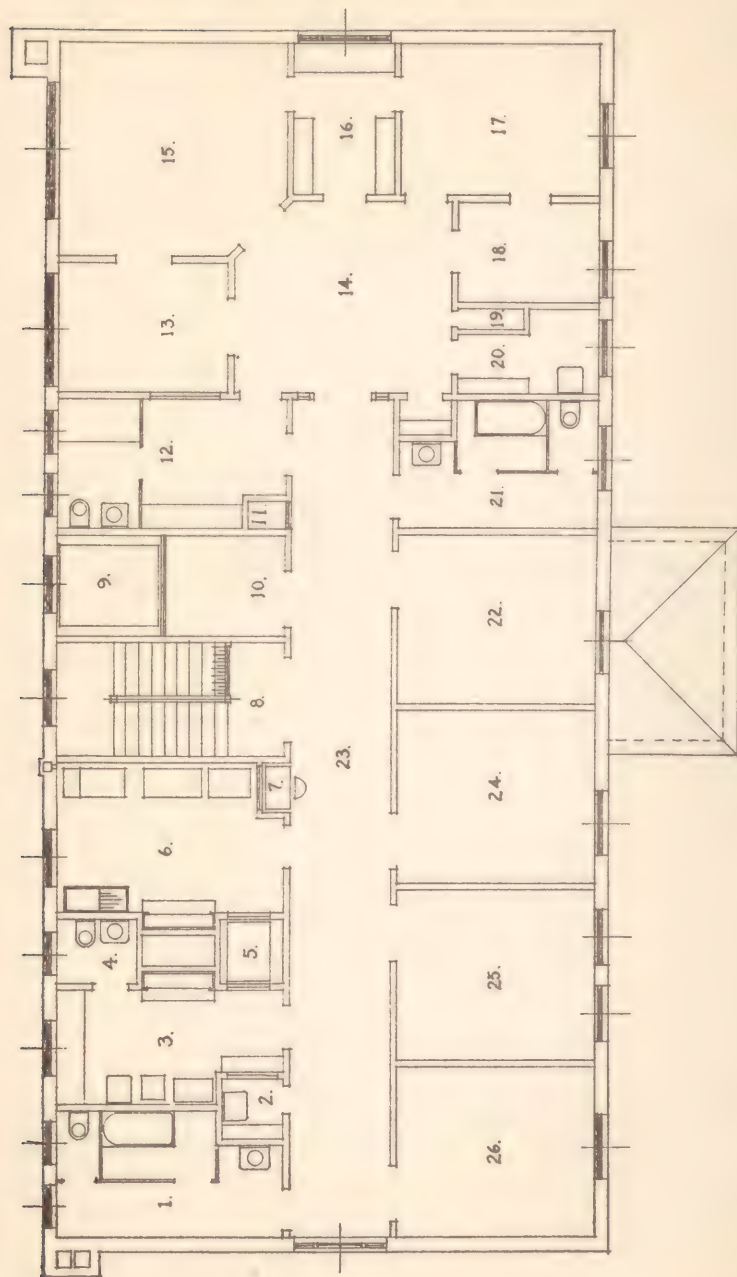


Fig. 4. Second floor plan.

Fig. 4. Second floor plan.

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|---------------------------|---|
| 1. Toilet and bath room. | 15. Operating room. |
| 2. Porter's room. | 16. Instrument and sterile supply room. |
| 3. Utility room. | 17. Sterilizing room. |
| 4. Nurses' toilet. | 18. Preparation room. |
| 5. Dumbwaiter. | 19. Blanket drier. |
| 6. Diet kitchen. | 20. Utility room. |
| 7. Nurse's station. | 21. Toilet and bath room. |
| 8. Stair hall. | 22. Private room. |
| 9. Elevator. | 23. Corridor. |
| 10. Elevator hall. | 24. Private room. |
| 11. Clothes chute. | 25. Private room. |
| 12. Doctor's wash room. | 26. Private room. |
| 13. Anesthetizing room. | |
| 14. Operating department. | |

trance No. 16. Fuel room No. 18 is easily accessible to the boiler room and coal may be dropped through a manhole. The x-ray room is provided as shown by No. 19. Help's toilet and locker rooms are shown at Nos. 20 and 21. Drug supply room No. 22 and kitchen stores No. 24 are centrally located and close to the grade entrance. The help's dining room No. 25 and the nurses' dining room No. 27 will be served from the serving room No. 26, which will also contain dishwashing machine, so that the dishes from these dining rooms may be washed and kept outside the main kitchen.

FIRST FLOOR

The male patients' department No. 14 is located in the east end of the building, and the female patients' department No. 23 is in the opposite end, each provided with its respective toilet and bath rooms Nos. 1 and 12. Room No. 2 is provided for the porter, with sufficient room for the brooms, mops, etc. Utility room No. 3 is provided with slop hopper, sterilizer, bed-pan rack, table linen and medicine case, and a door to dumbwaiter No. 5. The nurses' toilet room No. 4 is entered only through utility room. Diet kitchen No. 6 is equipped with a sink, steam table, refrigerator, and a table, with a door to the dumbwaiter No. 5. Nurse's station No. 7 is centrally located, so as to give good control with nurse's signal light on wall directly over her desk, which sets into a wall recess, so that only the nurse's chair projects into the hall. A door is provided in the partition between the reception room No. 17 and the 2-bed ward No. 16, so that room No. 16 may be used as a doctor's examination room later, with access to reception room through this door. The 4-bed

ward No. 24 could be divided into 2-bed wards, same as shown in Nos. 15 and 16, so that these rooms may be available for offices later without any alterations.

SECOND FLOOR

The four private rooms are shown by Nos. 22, 24, 25, and 26, and have been provided with male and female patients' toilet and bath room Nos. 1 and 21. Rooms Nos. 2, 3, 4, 6, and 7 are the same as described for the first floor. Doctor's wash room No. 12 is provided with a window so that the surgeon may view a patient being anesthetized in room No. 13 while he is preparing for the operation. Corridor No. 14 gives easy access to all rooms in the operating department. Operating room No. 15 is directly connected to the anesthetizing room No. 13, corridor No. 14, and instrument and sterile supply room No. 16. Sterilizing room No. 17 is connected to the instrument and sterile supply room No. 16 and preparation room No. 18. Blanket drier is provided at No. 19. Utility room No. 20 is so equipped that the entire operating department can be kept clean without leaving this department. When the permanent operating department has been installed in the north end of unit No. 2, this department may be readily changed into an obstetrical department.

It will be noted that the power plant for the first unit is included. The power and heat machinery may be of such character that they may be moved to separate power plant when such is needed by the expansion. The space now to be used for power plant can later on be used for such other purposes as may seem desirable.

It will be noted also that no arrangement is made for laundry, and that the first provision for

this will come with the building of a permanent power plant. In the meantime the large room under the stairs can be used for a laundry if necessary.

THE SMALL COMMUNITY HOSPITAL—THE EQUIPMENT.

Lists of Furniture for Offices, Reception Rooms, Kitchen, Dining and Service Rooms—Private Rooms and Wards—Operating Suite—Drug Room, Physical Therapy—Laboratory and X-Ray Department.

PAPER VI

IN our study of the small community hospital we have now discussed the survey of the community to determine whether a hospital, and what kind, seems to be needed, the raising of funds, the temporary or working organization, planning of the building, and the interior arrangement.

The construction of the building is wholly an architectural job, with which neither the board nor the superintendent has very much to do, excepting to look on and follow the evolution of its plans; and we will assume that now the hospital is completed, that the permanent installation is all in, and we are ready to equip the building for operation.

It is to this task that we address ourselves this month, and it is not an easy task, because conditions will vary in different hospitals, and equipment that would suit admirably in one will not serve at all in another. For this reason we are finding it necessary to set down more articles of equipment than any small hospital will ever need or install, but we do so in order that those charged

with the responsibility may have a wide choice, and the list given is complete enough to enable superintendent and board members to select what they may deem desirable in their particular problem.

It will be noted that we begin at the very entrance of the hospital, taking up the offices, reception rooms, and the examination or admission rooms. We continue then with the domestic departments, and go by easy stages to the rooms and wards, and then to the special or scientific departments. It will be noted that we have not attempted to list food supplies or drugs, or surgical instruments, for the reason that the hospital pharmacy, in these days, is undergoing vast evolution, and the simplicity or elaborateness of the drug supply will depend almost wholly on the character of the work to be done and the wishes of the medical staff. Food supplies are elastic, and the list of those that might be expected to find a place in any hospital would be a complete list of all the food products that enter into the social life of today; hence such a list would be too long to justify its inclusion. Surgical instruments depend wholly on the scope of the surgical work to be performed, the character and training of the surgeons, the size of the surgical staff and the needs of its individual members; such a list must obviously be prepared in cooperation with the various surgical services, and the specialists in each service are the best judges of their needs. Suffice it to say that it will be practically impossible for any hospital to buy all the surgical instruments that its various surgeons may require. Every man who has attained a place that will justify his inclusion in a hospital staff will have his own notions about his instruments, and the hos-

pital can undertake to furnish only those that may be considered standard, leaving it to the various specialists to buy on their own account, to be kept for their own special use, any instruments that are outside of the standard supplies. It is the custom in most hospitals, whether large or small, for each surgeon to have his own instrument case, under his own lock and key, with a duplicate key in the hands of the head surgical nurse. This box should contain his special instruments, and it should be a part of the training of the pupil nurse to include on the tray whatever special instruments each surgeon may need for his various classical operations. The nurses should clean and keep in good order the instruments in these boxes, and it should be a part of their duty to see that no instrument in any box is permitted to be used, except in the rarest emergency, by anyone other than its rightful owner.

EQUIPMENT OF THE SMALL HOSPITAL

FRONT OFFICE

- | | |
|--|--|
| 1 high desk for receiving clerk. | 1 file cabinet with drawers for bills. |
| 1 high stool for receiving clerk. | |
| 1 low desk for office clerk. | 1 room board for wall. |
| 1 desk chair for office clerk. | 1 physicians' "in-and-out" register. |
| 1 card index file for admissions. | |
| 1 file cabinet for one month's clinical records. | 1 safe for money and patients' valuables, etc. |

SUPERINTENDENT'S OFFICE

- | | |
|----------------------------|--------------------------|
| 1 roll top desk. | 1 large rug. |
| 1 swivel chair. | 2 arm chairs. |
| 1 rotating book rack. | Some wall pictures. |
| Some sectional book cases. | 1 letter filing cabinet. |

RECEPTION ROOMS (ALL FURNISHED ALIKE)

- | | |
|-----------------------|---------------------------------|
| 1 large center table. | 1 rocking chair. |
| 1 small side table. | 6 comfortable arm chairs. |
| 1 lounge or couch. | Some appropriate wall pictures. |

DOCTOR'S EXAMINING OFFICE

- | | |
|------------------------|-------------------------------------|
| 1 gynecological chair. | 1 extension light. |
| 1 flat top desk. | 1 combined letter and case cabinet. |
| 1 swivel chair. | |
| 2 arm chairs. | 1 small instrument cabinet. |
| 1 side table. | |

KITCHENS AND DINING ROOMS

- | | |
|--|--|
| 1 range. | Soup kettles and stock boiler. |
| 1 broiler and toaster combined. | Whips, cream and egg. |
| 1 3-section vertical steam cooker. | Glass jars for sugar, flour, etc., and cabinet. |
| 1 3-compartment deep sink, cy-
press or alberene stone, brass-
rimmed. | Biscuit and cake cutters, assorted. |
| 1 large cook's table with drawers. | Knife boards, wooden bowls, roll-
ing pins and bread boards, po-
tato mashers. |
| 1 utensil rack on floor. | Ice cream freezers (large and
small). |
| 1 utensil rack suspended over
range. | Scoops (large and small). |
| 1 dish warming cabinet. | Can openers. |
| Dish washer. | Pressers—lemon and meat. |
| Large carving knives and forks,
spatulas. | Casseroles and lids. |
| Large spoons and ladles, wood and
metal. | Ramekins. |
| Pans—pie pans, sauce pans, drip
pans, baking pans, frying pans. | Muffin and cake rings. |
| Cast pots, various sizes. | Egg poachers. |
| Colanders and drain pans. | Double boilers (large and small). |
| 1 condiment case with individual
receptacles and shakers. | Waffle irons. |
| | Dippers (large and small). |
| | Pudding and jelly molds. |

PREPARATION AND BUTCHER'S ROOM

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|--|--|
| 1 fish icing box. | 1 potato peeler, belt and pulley. |
| 1 butcher's block. | 1 ice cream freezer, belt and pul-
ley. |
| 1 strong table, metal top. | 1 ice crusher, belt and pulley. |
| 1 line shaft, ceiling motor, pul-
leys. | 1 bread slicer. |
| 1 meat slicer, belt and pulley. | 1 potato masher. |
| 1 meat grinder, belt and pulley. | 1 long low bench. |

DINING ROOMS

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|-----------------------------------|--------------------------------|
| Tables and chairs. | Serving tables, for each room. |
| 1 serving cabinet, for each room. | |

FLOOR SERVING ROOMS

- | | |
|--------------------------------|---------------------------------|
| 1 small steam table with oven. | 1 ice box or refrigerator. |
| 1 side table. | Cupboards for dishes. |
| 1 gas or electric plate. | Drawers for cutlery and napery. |

CHINA AND GLASSWARE

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|---|--|
| Plates—dinner, breakfast, soup,
bread and butter, cake (with
covers). | Pitchers—large water (large and
small cream). |
| Cups—coffee and tea, demi-tasse,
custard, children's mugs. | Tumblers—glass for wards and
private rooms, wine and medi-
cine glasses. |
| Bowls—porridge, finger. | Tureens—soup—and gravy boats. |
| Saucers. | Dishes—large and individual vege-
table, pudding, casserole. |

CUTLERY AND SILVERWARE

Knives—dinner and breakfast, butter, carving (large and small), cake, parers. Ladles—soup, gravy, punch.
Forks—dinner and breakfast, carving, pie, oyster. Nut crackers.
Spoons—table, dessert, tea, mustard, soda. Pitchers—coffee and tea (large and individual), syrup (large and individual).
Shakers—salt, pepper (large and individual).

LINENS, NAPERY, AND COTTON GOODS

Table cloths; napkins; dish towels; dish cloths; sheets; draw sheets, slips; mattress covers; wheel chair covers; towels, bath, face, and hand; wash rags; tray cloths; dresser and table covers; screen covers; stool covers; Morris chair covers; window curtains; laundry bags; nurses' caps and aprons; hospital gauze, assorted mesh; absorbent cotton; batting; assorted bandages, or bandage cloth; lot of indianhead; operating gowns.

UNIFORMS

For ushers, orderlies, maids, floor men.

JANITOR SUPPLIES

Mops; mop holders; mop pails; sponges; chamois; soap powder shakers; brooms; brushes—scrub, floor, radiator, toilet bowl, slop sink, clothes, and bottle washers; feather dusters; garbage cans for everywhere; soaps; soap powders; soda; bleach; oxalic acid; ammonia water; soap boiler.

TRUCKS

Food; laundry; garbage; medicine wagon; trunk; irrigation wagons.

SCALES

Drug room; laboratory; large and small for store rooms; for weighing patients; coal scales; nursery scales.

FURNITURE FOR PATIENTS

Private room—bed; mattress; 2 pillows; dresser; chiffonier; 1 rocker; 2 straight chairs, 1 Morris chair; commode; footstool; 1 small table; 1 bedside table; 1 3-section screen; nurse's couch, mattress and pillows.
Wards—beds; mattresses; pillows; bedside rugs; clothes lockers; 1 or 2 Morris chairs; footstools; straight chairs; 1 or 2 rockers; bedside tables; 1 large nurse's work table; nurse's desk and chair; 2 or 3 3-section screens; commode.
Sun parlors—willow furniture; arm and straight chairs; lounge; center table; book shelves.

APPARATUS FOR NURSING PATIENTS

Stretchers, collapsible and wheel; dressing carts; bed rests; back rests; bed elevators; bed rollers; wheel chairs; irrigation stands; examination lights on stands.
Enamelware—bed pans; urinals; wash pans; pus basins, nests; shallow dishes, nests; deep basins, nests; soap dishes; cups; pitchers, large and small; dressing jars; enema can; irrigation can.

Rubber goods—gloves; assorted rubber tubing; water bottles, ice bags, and caps; stomach and enema tubes; rubber tissue and dam; sheeting; Kelley pads; assorted catheters; Esmarch bandages and tourniquet rubber.

Miscellaneous—pins and safety pins; hypodermic syringes; clinical thermometers, mouth and rectal; scissors, assorted sizes for nurses.

SPECIAL DEPARTMENTS

OPERATING SUITE

Tables—operating, instrument, anesthetic, drum tables, work tables in nurses' work room, side tables in preparation room, writing table for doctors' room.

Shelf cabinet for operating room; wall cabinet for preparation room; stools, high and low.

Sterilizing Apparatus—water, dressing, instrument, salt solution, utensil, and mattress sterilizer; laparotomy drums and stand; dressing sterilizer carriage.

Miscellaneous—solution basins and stand; arm plunge on stand; goose neck reflector light; cautery apparatus; motor and bone drill, with tools; head lamp; lot of unbleached muslin for treated and plaster bandages; glass or enamel jars with covers for sterilizing articles; catgut and tendon, assorted; silk thread, black and white, assorted sizes; oiled muslin; green soap; shakers for powders, etc.; anesthetic apparatus and masks; head nurse's desk and chair; chairs, couch, and lockers for doctors; lockers and chairs for nurses' room.

MATERNITY DEPARTMENT

Labor room—special bed; wheel stretcher; cabinet for instruments; cabinet for sterile dressings; special light; resuscitation apparatus. Sterilizing outfit as for operating suite.

NURSERY

Baby beds on stands; bath tubs; compartment table for dressing babies; incubator; low rockers without arms.

THE LABORATORY OF PATHOLOGY

Glassware—test tubes; beakers; flasks; glasses; assorted glass tubing; assorted bottles; reagent bottle.

Paraffine oven; autoclave; bunsen burners; microtome; special trocars; long hypodermic and spinal needles, with syringe; centrifuge; post-mortem set; microscopes; platinum wire; petrie dishes, nests; porcelain bath; filing cabinet.

DEPARTMENT OF HYDROTHERAPY

Mixing chambers to douch, needle, and shower; continuous bath with temperature control; massage table; light and heat cabinet; baking apparatus for parts of body; electric battery for treatments.

X-RAY DEPARTMENT

Machine, with switch board; table, recumbent and erect; tubes; fluoroscopes; treatment brushes and electrodes; plates and holders; filing cabinet; viewing box; dark room; sinks, baths, lights, dryers, shelves.

PHARMACY

Prescription case; scales, apothecary and avoirdupois; mortars and pestles, porcelain and iron, large and small; spatulas and ointment plates; pill molds; glassware; graduates, large and small; assorted bottles and corks; shelf bottles; labels; glass tubing, assorted; test tubes; beakers; powder and pill boxes, assorted.

THE SMALL COMMUNITY HOSPITAL—THE ORGANIZATION.

The Trustees and How Chosen—Mistakes to Avoid—The Administrative Offices—The Medical Staff—Principles Underlying Management of the Institution.

PAPER VII

THE organization of any hospital may be considered in three parts: (1) the trustees and the agencies that lead out from them as a connecting link between the institution and the community, (2) the administration, and (3) the medical staff, or, in the event that there is no staff, the medical men who care for the patients in the institution.

Perhaps the community, as a whole, must choose the trustees for its hospital, and it may be by election. While we must all deplore the injection of politics into hospital work, it will be necessary, in order to obtain a board of trustees likely to work in harmony and for the best interests of the hospital, for a very small group of people, or even one or two persons, to decide upon those best fitted for trusteeship, and, after this decision has been made, to try to get it carried out in any election that may be formally held.

This procedure, which is a form of political caucus, is unavoidable because no board of trustees chosen haphazard, without previous conferences

by a small group, in a public assemblage or at a public meeting, can be given that careful consideration that the conduct of so important an institution as the community hospital deserves. As a rule, a temporary board of trustees will already have been chosen for the raising of funds, the making of plans and the building of the hospital, and it may be that this temporary board will go over for the first year and that a plan of election of members will have been written into the constitution and by-laws of the institution that will provide for the annual election of a certain percentage of the trustees. Such a clause in the constitution should provide that not enough trustees shall be elected in any one or even two years to upset policies that have been agreed upon and found to work well by the first board; that is to say, if it shall be desired to have ten members of the board, it will be a good plan to provide for the election of two new members each year. For this purpose the first board will be divided into five parts, two of the members elected for one year, two of them for two years, and so on.

It has happened very frequently that a community or some influence in the community will become disgruntled with policies operating in the hospital and want to upset these policies; but it can also happen that these policies will have been decided on after very careful and intelligent consideration and it can happen that new members coming in, even elected by the influence of disgruntled citizens, will find after they have become familiar with the hospital that the policies that had given rise to dissatisfaction were wise and just and should be carried out. In such a case,

if a majority of the board had been elected instead of only a few members, the majority might upset these wise policies to the great hurt of the institution and before the board had had time to see these measures at work. Trustees elected by disgruntled supporters of the institution have very frequently become the strongest supporters of policies against which they were sent in as trustees.

CHOICE OF BOARD MEMBERS

The first thing to think about in connection with the creation of a permanent board of trustees, and perhaps the most important thing, is the elimination of persons who will want or be able to use the hospital for their own private, selfish interests. Frequently some doctor will want his friends on the board with the intention to bring about conditions that will be favorable to him and his personal interests. To accede to this desire on the part of a medical man will be to invite disaster, because the most pernicious influence in any hospital is that of a physician who wants to use the institution for his private purposes as against the interests of all other physicians.

Another person to keep off the board is one connected with some commercial house that would obviously want to sell goods to the hospital. Sometimes this person will not be one of the heads of the commercial house, but perhaps a minor employee who has an idea that if he can get on the hospital board and bring the trade of the institution to the house with which he is connected it will become a distinct asset to him in his commercial and financial relations with the house.

If the board is selected before the hospital is built and before the site is purchased, it will frequently happen that some real estate man or property owner will want a place on the board in order to influence the selection of the site so that he may sell property to the hospital.

However sordid a consideration of these things may seem, experience throughout the country in the creation and operation of boards of trustees makes it necessary to eliminate people who have personal interests to serve.

The board member should be selected for some definite reason: (1) let us say, because he is a banker and will be a wise counselor in the financial operations of the institution; (2) at least one member should be thought of because of his knowledge of architecture and building operations; (3) one should be thought of because of his intimate knowledge of merchandising; (4) another because of his knowledge of the handling of people, in order that he may be a wise counselor concerning the employees and the adjustment of difficulties with them.

All the members should be selected because of their broad-mindedness and because of their ability to see things in a large perspective. It isn't the business of a board of trustees or any of its members to "run" the hospital in the details of its administration—that is for the superintendent and for his or her paid associates.

After the board is finally selected, it will be well to divide its members into working committees, or rather into advisory committees, because their work should always be advisory to the superintendent and the plan of operation should be for the superintendent to have access

at all times to the chairmen of the various committees, for counsel and advice appertaining to things particularly coming within the jurisdiction of the committee. These committee members should have no power to give orders, else it will be quickly found that the superintendent is under the necessity to obey more than one master—which will be hazardous.

The board of trustees should meet sufficiently often to pass upon all questions of policy and along the lines of the broader aspects of administration; these meetings should be held at sufficiently short intervals for the superintendent to be able to bring his or her troubles to the board in session, in order that he or she may not have to take orders from individual members; and it should be understood that board meetings at stated intervals shall be a duty which the trustees are in bounden duty to respect and they should attend the meetings or get off the board and make way for others who can and will attend to the duties of trusteeship.

The success of a hospital, in very large measure, will depend on the character of the trustees, not because of the detail work that they will do, but because of their ability to judge of the work of their superintendent, and their capacity to refrain from meddling.

There is no particular reason why the board should consist of any special number of trustees. The condition in each community will guide in this matter, the only point being that no one should be a trustee of a hospital who has any personal interest to serve or who has not the time or the inclination to give attention to his duties. It will be found expedient and wise to have several women on the hospital board, but most women

who have homes of their own and who are not familiar with the duties of trusteeship will be very likely to want to meddle with the domestic affairs of the institution. Such women should be kept off the board because they do not know hospital conditions; while they may be excellent buyers for their own homes and excellent housekeepers, they might be miserably poor judges of materials and fabrics best for institutional use, and even poorer judges as to domestic management.

THE SUPERINTENDENT

Although we talk about the want of standards in hospital management, some of the details of management are pretty well standardized. There is coming into existence a group of trained people for hospital superintendents, and the number is growing greater year by year, until now we have some pretty well-defined standards even for the selection of hospital superintendents; there are a few places in the country in which hospital superintendents are being carefully and painstakingly trained for definite careers in this work. Very frequently the trustees of small hospitals assume the attitude that their hospital is not large enough and that they cannot afford to pay a salary to justify their employing a trained man or woman. This is obviously a mistaken policy and is not warranted by experience or facts. An untrained person can be the most expensive item in the hospital management and cost more eventually than mistakes in any other direction. A good superintendent, even in a very small hospital, can save several times his or her salary by an intimate knowledge of hospital conditions and by familiarity with methods of buying and meth-

ods of using hospital commodities; moreover, an untrained or improperly trained superintendent can play havoc with good service to the sick and thereby make the hospital so unpopular in the minds of the medical men in the community that they will be averse to sending their paying patients to the institution; whereas a properly trained superintendent will be able to do teamwork with the medical men, giving them what they want in the way of technic and service for their patients and thereby raising the standards of practice in the institution to such a point that the medical men of the community will make every exertion to get on the staff and to have their important patients go to that hospital. So any way one takes it, a properly trained superintendent who knows how to buy and how to use hospital property, and who knows how to serve the medical men whose patients he or she is caring for, will be the greatest asset the hospital can have, and such a superintendent, when employed, should be supported and let alone.

OTHER EMPLOYEES

Each hospital, small or large, will be a rule to itself as to the number of employees that it can advantageously use, and it will require the best tact and judgment and all the knowledge of a superintendent, coupled with wise counsel on the part of the members of the board, to distribute the work of the institution so that the smallest number of people will be able to do, not only the largest amount, but also the greatest variety of work. For instance, in the small hospital it will be impossible to think about employing an all-time radiographer, an all-time pharmacist, an

all-time anesthetist and an all-time dietitian; and yet all these branches are of very great importance if the hospital is to give proper service to the sick under the orders of the physicians. The question then comes up, how can this be done? One hospital in the class we are now discussing had in the graduating class an exceptionally bright young woman of excellent preliminary training, who had developed great versatility in the course of her three years of training. She learned, among other things during her training, to conduct the pharmacy, and she did it well; she also spent a great deal of time in the laboratory under the direction of the pathologist who spent certain hours there, and she became a very good technician and was able at the time of her graduation to do most of the routine work of the laboratory. The same young woman also learned, during her rotation service as an operating room nurse, to give anesthetics and to give them well. After her graduation the board of trustees had the good sense to send this young woman away, paying her salary and expenses while she took work under good directors in pharmacy, in bacteriology and the technic of pathology, in the giving of anesthetics and in x-ray work. The hospital was small and there was not a great amount of work in any of these various branches to be done, but when this young woman returned at the end of eighteen months she became practically a "Jack of all trades" and was without question the most valuable asset that hospital had. There was a good consulting pharmacist on the staff; another member of the staff was an excellent radiographer and a good interpreter and his assistance was cheerfully given, and the

men who had been trained during their internship in the giving of anesthetics were available to advise and help her in that field. That young woman is now drawing a handsome salary from a hospital whose resources are small, and she is giving a variety of service that would elsewhere and under other circumstances cost the institution very much more; the institution is doing, and doing well, a variety of work that is being neglected or indifferently done in most hospitals of even a considerably larger size. There is no good reason why the same principle should not be applied in any other small hospital; only the material at hand must be developed along lines profitable alike to the individual and to the institution.

There is no hospital so small that its expenditures for food and the service of food to its patients fail to justify the employment of a woman trained in dietetics, and in a small institution the same woman could easily be matron of the institution and look after the housekeeping, the laundry and the general kitchen.

The time has gone by when it is reasonable to expect nurses or interns to act as menials. Aside from fairness and justice to these young people, it is positively wasteful of their efforts and capabilities to put them at minor occupations. In other words, their service is worth more in the field which they are expected to cover than it can possibly be in fields where the lowest type of paid help can efficiently perform the work. Many hospitals that now find themselves unable to attract young women to the training school and young men into internship have only themselves to blame. Also, many hospitals that are having

to use high-salaried graduate nurses where they might be using pupils for the performance of the nursing service, and that are having to pay resident physicians where unpaid interns might do the work quite as well, have brought this situation upon themselves by their short-sighted attempts to use the pupil nurses as maids-of-all-work and their interns as orderlies and scrubmen.

It would be utterly impossible to attempt to lay down any definite rules as to the number of employees compared with the number of patients in a hospital; that relationship will depend so greatly on the conveniences of construction of the building and on the management of the work. It can only be said that it will never do in even the smallest hospital to let the premises go unclean, the linens unlaundered and the patients uncared for. This is merely on the basis of financial returns, to say nothing of the moral issues at stake. A hospital which is unclean and whose service is poor will not attract funds, and the hospital which is clean, whose service to its sick is of a high order, and whose trustees know their business—the business for which they were really elected—need never be without sufficient funds in any community in this country. People who have brains enough to own money and to carry responsibility are learning too much about the value of a community hospital, even for their own purposes and for the purposes of their families and friends, not to be far-sighted enough to be willing to make proper contributions for its support; but they will not give to a hospital that they do not like and that is not rendering good service to the sick.

THE MEDICAL STAFF

In considering the medical staff of a small hospital, we are treading on debatable ground, a ground which is as yet uncharted, and on which the roads are only faintly marked and where are no highways used by all the travelers. Not even the medical profession is agreed on the proposition that every hospital, no matter what its size, should have a definite or closed staff, and in many individual cases there is no doubt that a closed staff, as we know it, would restrict the activities of the institution, interfere with its income and limit its service to the sick.

But as a broad proposition there ought to be a closed staff in every hospital, large or small; by "closed staff" we mean a group of physicians selected by the board of trustees whose aggregate duty it is to see that proper technic in the various medical services is established and that the medical and surgical work is properly done. When it is possible to attain such a group in a hospital, upon it should also devolve the duty of passing upon the qualifications of outside physicians who may be permitted to bring their private patients to the institution. Usually medical men will not be selfish in this regard; they will not wish to keep out qualified medical men, and as a rule, such a staff in the aggregate will be a safe guide to the superintendent as to the elimination of any physician in the community who is not believed to be capable of work standardizable in the community's hospital. It is one of the difficult tasks of the board of trustees to say who may or may not do surgical operations in the hospital; as a rule, trustees are laymen and they do not know surgical technic. Even if they

were present in the operating room, they would be incapable of passing on the qualifications of a surgeon or an obstetrician, and they are thrown back of necessity on their own group of medical men for guidance in such a matter.

The superintendent of the hospital, no matter whether he be a layman, a physician, or a trained nurse, will be pretty apt to be closely in touch with the qualifications of the medical men in the community and he or she will be able to obtain intimate appraisal of the qualifications of outside medical men from his or her association with members of the staff. These men will tell the superintendent things in confidence, whereas they would not want to go on record before a board of trustees; and it then becomes the unpleasant duty of the superintendent to bear the brunt of responsibility in withdrawing the facilities of the hospital from physicians who are regarded as likely to do work of a character that the hospital cannot stand for.

OPEN-DOOR HOSPITAL STAFFS

A great many hospitals have had some experiences that make them very loath to attempt the conduct of a hospital under a closed staff. Most of these experiences have to do with baneful influences operating in the staffs of their institutions; and a good many superintendents share this feeling, and for the same reason. But if a hospital undertakes the conduct of its business without a responsible staff upon which to lean, it becomes the imperative duty of somebody connected with the institution to accept responsibility for the character of the medical and surgical work done there. Small hospitals, unfortunately,

cannot afford, or at least think they cannot afford, to have superintendents with medical training and no other person is qualified to direct the practice of medicine in any institution; the open-door hospital with an untrained superintendent and with a lay board of trustees must have an intolerable situation and no good work can be expected in such an institution.

The best course for a small hospital whose trustees do not want a closed staff is to have at least an advisory staff, a group of men who can be counted on to see that the medical and surgical work is of a good quality and to see that proper technic is instituted and enforced. Almost every community hospital will have to care for a certain number of free patients. These patients may be paid for by the municipality, by the county, or by some social or benevolent organization, but they will be regarded as what we call "service" patients in the institution and there will be no medical fees connected with their care. As a rule, medical men are not going to take free care of patients in a hospital unless they have a *quid pro quo* in the shape of a staff appointment, or a title, or some influence in the institution that will give them a better standing in the community and that will give them a broader opportunity for experience and practice.

So, taking the whole problem as it must exist in every institution, it is necessary for the administrative forces to rely upon and be guided by one or more medical men concerning the medical and surgical work. They may be called a closed staff or an advisory board of doctors, or it may be the private physician or an influential member of the board of trustees. The result will

be the same except that where the connection is not publicly expressed and recognized in an official way the influence is likely to be insidious and harmful rather than beneficial.

THE DIVISION OF SERVICE

No matter how small the hospital or how limited its various services, there ought to be some medical organization or some medical man to supervise and direct the activities of the various services. Call these men chiefs of service, or accept their service without a title; the result must be the same if the conduct of the institution is to be on a high plane. If the institution is large enough to afford work in any service for more than one man a sufficient number of men should be appointed to do that work. For instance, if there is sufficient surgical work to justify more than one man to be associated with it, more than one should be appointed, but one of these should be the chief of the service. He need not be an autocrat, but he should be the member of that service to whom the superintendent and the board may look for confidence and guidance. He should see to it that a proper technic is observed in the operating rooms and in the dressing rooms and in the admission department. He should see that the sterilization is accurate and adequate; he should see that there are rules for the guidance of the nurses and others doing business in the department. The superintendent and the board should rely upon him for advice regarding new instruments and appliances. If it transpired eventually that this chief of service is not attending to his business and is not meeting the responsibility that goes with his office, he

should be asked to relinquish it and someone else should be appointed who will attend to it.

It is a difficult thing always to get the members of the medical staff to create rules for the government of their various services. In such a case the superintendent of the hospital should secure rules that prevail in other institutions of like character and offer them as a framework upon which the staff of the hospital may build rules more to its own liking and that will come nearer to meeting its needs. Such rules, when made, should be offered by the service staff, approved by the staff as a whole, and put up to the board of trustees by the superintendent for the board's final approval. When this is done, the superintendent can always fall back on the creation of these rules under the orders of the board of trustees and insist upon their obedience by the service men. Unless the board has approved them, the service men will always feel at liberty to break them when occasion seems to require.

This paper makes no attempt to go into details of organization; it merely suggests some fundamental principles which every board and every medical man in any hospital will be called upon to face and to agree upon. It may be added that probably the most disturbing situation in a hospital, and one calculated to destroy discipline and order and prevent coordination of effort is lack of definite purposes, definite fixing of responsibility. Too often trustees avoid making definite decisions for fear of stepping on someone's toes, or hurting someone's pride. This indecision makes friction, serves to lessen the authority of the superintendent, and invariably makes for poor service.

THE SMALL COMMUNITY HOSPITAL—INTERNS, NURSES, AND EMPLOYEES.

Principles Underlying Intern Service—How Interns May Be Secured—Their Work and Training—The Nursing Problem and How to Handle It—Other Hospital Workers.

PAPER VIII

ONE of the most difficult administrative problems with which the superintendent of a small community hospital has to deal is that concerning the interns and nurses. So much depends on the adequate solving of this problem that it is entitled to more than passing consideration.

THE INTERNS

A great many trustees of small hospitals are under the impression that their respective hospitals are too small to justify the employment, at a salary, of an all-time young physician to act as resident medical officer of the institution. In large, well-conducted hospitals it is assumed from long experience and practice that one intern can take care of approximately 25 patients and do justice to them; in a small community hospital of, let us say, 50 beds, it may be possible to get along with the services of one resident physician or intern, because in such a hospital there are proportionately more private patients than in a large institution, and the attending physicians of these patients in a small hospital give more time and take

a greater personal interest in them and do a good many things for them that are done by the interns in a large hospital.

But it seems inconceivable that any hospital could give adequate service to the sick without the continuous presence of a medical officer; it is not always possible to secure the attendance of a visiting physician in an emergency, and sometimes even a private patient might have to go for hours without medical attention which might be of the most urgent character. One of the reasons why patients go to a hospital is in order that they may have the advantage of the constant attendance, or at least the constant presence in the institution of a medical officer to meet complications that might come up. While it might be urged that usually one or another of the staff members is in the hospital during the greater part of the twenty-four hours, this cannot be considered adequate service, because physicians of private patients do not want other physicians who are in business competition with them in the community to meddle with their patients.

So, taking either horn of the dilemma, it is very necessary that there be someone in the hospital all day and all night, someone who has had medical training and whose official position will permit him, or even compel him, to give service in an emergency to any visiting physician's patient—and, obviously, to receive patients, to give advance orders for them on their admission, to perform the technical duties of discharge, to write orders for the laboratory, x-ray, and diet work, and to keep up the records of patients. One resident intern cannot hope to do all this work adequately and in consonance with modern hospital and medical demands for more than 25 patients; for any

greater number than that there ought to be two interns, and for any fraction over 50 patients there ought to be three, and so on.

Let us see now how we are to obtain these interns. This is a very serious problem with small hospitals.

The Council on Medical Education of the American Medical Association, which we must all accept as the authority on the training of the interns, since there is no other, has undertaken to classify the hospitals of this country in so far as the training of interns is concerned, in connection with medical school work throughout the country. The council has in each state a committee, usually composed of three members, whose duty it is to investigate the hospitals of the state to determine whether they are equipped and administered in such a way that interns can obtain adequate medical and surgical training. These committees are confronted with a huge task, and the work has not been well done up to this time, but the intention is there and some progress has been made, and the committees have gone far enough so that their findings, on investigation of the hospitals, have great weight with medical schools that are turning out these young physicians.

The practice now followed by a good many medical schools of giving a fifth or so-called "hospital year" is becoming more common all the time, and will undoubtedly be an invariable custom within a very few years. The work done some four or five years ago by Dr. Flexner under the auspices of the Council on Medical Education in the standardization of the medical schools of the country has served to eliminate nearly 50 percent of the schools that had been in existence up to that time, and has crippled many of the others, by show-

ing up their inadequacy to give a proper medical education. Owing to these facts, and the further fact that the curricula for the remaining medical schools and their standards of admission have been so far advanced, not nearly so many young physicians are being turned out of the schools. In contrast with this, the hospitals have been growing so rapidly in numbers that at present there are not nearly enough young graduated physicians to go around, and the schools themselves and the young graduates can pick and choose the hospitals to which the latter want to go. Perhaps this phase of the case has had a greater influence in the elevation of standards in hospitals than any other one thing, because the schools and these state committees and the young medical men themselves are discriminating to an extreme degree in selecting hospitals for interns.

It has been urged, and there is some warrant for the contention, that a small hospital cannot give an intern the same good training that he can obtain in a large institution, for the two reasons (1) that the large hospital has available a more experienced medical staff for the teaching of interns, and (2) that the equipment and facilities in the large institution are greater than in the small hospital. But, on the other hand, these advantages can be in a great measure overcome by the more highly individualized attention that interns can get in the small hospital if the staff of that institution is composed of well-equipped practitioners who are capable of teaching, and if the administrative atmosphere is conducive to good service for the interns. Too often in small hospitals the intern is considered a necessary evil, and, under the influence of the principal of the training school, who is often also the superintendent of

the institution, he is regarded as of far less consequence than the pupil nurses; often in some cases he is compelled to do orderly work for the nurses. Where this situation exists it is going to be difficult and, in the near future, impossible to obtain desirable intern service.

For these reasons hospital trustees ought to consider this intern problem very seriously, and it seems to me that the way out of it is to designate the intern by a title of more dignity. Perhaps if, instead of "intern," he could be called the "resident medical officer," and if the trustees and the staff would support the dignity of this title and compel the hospital employees to recognize it, it would help a good deal. Young men serving in hospitals cannot hope to make money, but they have a right to hope for an opportunity to acquire experience and skill. Moreover, every young man has a certain amount of professional vanity and pride, and a title means much to him.

Now, how are small hospitals to obtain their interns? Of course, it is far better for a resident medical officer to know the institution, the medical men, and the hospital environment, and if he can serve for several years it will mean much to the institution. One very good way, after the creation of conditions in the hospital that will permit him to acquire actual experience in the practice of medicine, is to appoint the intern under a definite contract, giving him for the first year a salary of, let us say, \$25 per month, with an increase to \$50 for the second year, \$75 for the third year, and \$100 for the fourth year. Most young medical men are poor, and they know perfectly well that when they go into private practice there will be a period when expenses must go on and when the income is small. If the young man

is wise he will want to stay in a good hospital for three or four years, especially if he can save enough money during that time to enable him to begin his private practice in a decent and dignified way and with a feeling that he has a reserve fund to tide him over the early years. It may be urged that the small hospital cannot pay these salaries, but if the choice of the intern has been wise and if good use is to be made of his services he will have become so useful to the visiting medical men in the institution that his presence alone will serve to attract enough additional business, by way of private patients, to far more than meet the increased salary obligation.

It can easily be conceived that a good intern in a small hospital could give anesthetics, do the greater part of the pathological work, and perhaps do the x-ray work as well. Of course these extra duties are contemplated only in the event that the hospital is small and that the intern's time cannot be utilized to its full extent with the actual care of the sick on the wards.

The best way to go about getting such an intern is to take up the question with one or more of the medical schools. The success that will be met in this direction will depend largely upon the showing that the hospital can make as a good place in which to train the intern. A good many small hospitals do secure their interns in this way, but it goes without saying that only the best medical schools should be consulted and that the interns should be drawn only from the best schools.

When a good intern is secured it should be the duty of all the members of the staff and all the visiting physicians to help train him, and it should be the duty of the superintendent of the hospital, the head of the training school, and everybody

else in the institution to make a serious and constant attempt to help him in his training.

THE TRAINING SCHOOL

It is a question open to argument in many directions whether or not a small hospital should have a training school, with the alternative of employing only graduate nurses to do the nursing work. Again, the question comes up of the greater facilities and the broader training that a nurse can have in a large hospital than in a small, and the question again has two sides, precisely as the same question has two sides regarding the intern. There are many small hospitals that are turning out very excellent graduate nurses from their training schools. Some small hospitals in this country have turned out some of the best graduate nurses that we have; some of them are turning out graduate nurses who are making splendid hospital administrators. To my way of thinking, far more depends on personality in the training of a pupil nurse than on the equipment or facilities of the institution. The large hospital has better equipment, larger facilities, and is supposed to have a more experienced medical staff under whose training the pupil nurse can acquire a greater fund of information concerning her future work. But there are many small hospitals in which the balance is more than reduced by the high character of the medical men and their professional skill, and by the qualities of a superintendent, especially where the staff and the superintendent give individual attention to the pupil nurses and help them individually in their training.

A few states in the Union have laws forbidding the operation of a training school in a hospital

smaller than a certain size; 25 beds is the number set by one state. It seems to me that the number of beds in a hospital is a poorer guide in such a matter as nurse training than the work done in the institution.

I have in mind one hospital, which is extremely moderate in its equipment, and on which not much money is spent by the community, but whose staff, superintendent, and head of the training school give such a thorough course of training to their pupil nurses that the graduates of this school are in constant demand even in competition with graduates of schools in the same neighborhood very many times larger and richer. While the activities of graduate nurses have vastly broadened in the last few years, extending into industrial work, visiting nursing and all the specialties, there still remains the fundamental field of private nursing to which most pupil nurses during their training aspire. It does happen that some of the larger, finer, and most extravagantly equipped hospitals confine the training of their pupil nurses to the nursing of patients under the conditions that prevail in that particular institution. Hence, when a graduate goes out into private practice she finds herself at sea in the average home, or if she goes into visiting nursing in the homes of the very poor she cannot accustom herself to the very plain and meager facilities of the home. Too often she throws up her hands in disgust at the absence of the things that she considers necessary for the care of her patient, instead of finding fault with her own training that she cannot make use of the things actually at hand. A nurse from a small, inadequately equipped hospital is much more likely to have been accustomed to making "something else do," and

consequently will be at home wherever she finds herself in the presence of a sick bed.

Whatever the limitations of the hospital may be in regard to its equipment and facilities, there need be no such limitations in regard to the ability of the hospital people to carry out a proper curriculum for even their few nurses and to administer this curriculum under a rigid discipline.

If there is a proper loyalty on the part of the medical staff or the group of medical men practicing in the small hospital, there ought not to be any trouble about securing proper pupil nurse material for the training school. Medical men are always in close contact with the homes of the people, and education is too common nowadays for the young women residents of small communities to be deprived of proper educational facilities; indeed, there is hardly a community in this country—even a small community—that has not available excellent school facilities and a good proportion of well-educated young women. Too often the doctors themselves are to blame for the young women of the community going to large metropolitan hospitals for their training, and far too often the advice of the doctors that sends the young women away from home is based on their knowledge of the inadequacies in their home hospital.

So that it seems to me there is a very great responsibility resting upon the physicians who practice in the small hospitals in regard to the nurses. The medical men ought to see to it that conditions in their home hospital are such that they can advise young women of their acquaintance or who belong to the families in which they practice to go to this hospital for their training. Far too often the inadequacies in the small hospital are due primarily to the medical men them-

selves; the moral tone in the hospital is set by the medical staff as a rule. If these men are ethical and their morals are good, if they are earnest and conscientious in their work and are exemplary in their habits, these virtues will be reflected in their hospital, and their hospital will be an attractive place for a young woman of culture, refinement, and education; she will want to go there and her parents will want her to go there. Low morals in a hospital are very rarely due to the character or qualities of the superintendent or the employees.

Another thing: if low standards of education and character are once admitted to the training school of even the smallest hospital, the training school in that hospital is doomed, while if the standards of character and the educational requirements are high and are strictly enforced, it will follow always that the training school will be a good one and that material for pupil nurses will not be wanting. It will not be profitable to go into the details of the conduct of the training school of the small hospital; that is going to be difficult always because of the lack of trained teachers, but very much can be done by the head of the school, even though she be a busy woman charged with the administration of the hospital as a whole, especially if she can engage the interest of the members of the medical staff, more particularly the younger men, and bring them up to a point where they will be willing to exert themselves, study the many good text-books on nurse training, and do their part of the teaching in a conscientious way.

For the other workers in the hospital very little need be said, because I addressed myself to a part of this subject in my last paper. Good hospital employees of the domestic class are hard to get;

one superintendent of a small hospital, who had an excellent administration and a quite superior class of employees, told me not long since that she had had to employ an average of at least ten people for each place before she obtained one with whom she was satisfied. She told me that her method of keeping these people in the hospital was to pay them more than they could make elsewhere; she added, "I am getting along nicely and keeping my house cleaner, serving better meals, and giving an all-round better domestic service than the hospital formerly had, and I am doing it with one-half the people." This superintendent's payroll was smaller than it was before, but the wages to the individuals were much higher. There is a hint here for hospital superintendents and trustees.

Only one more word: one trouble-maker among the common help in a hospital can do more to disorganize the help and to keep things in a ferment than the best superintendent can possibly counteract. The only way to do when such a person is discovered is to get him or her out of the service instantly. A strict enforcement of discipline and a strict adherence to established rules is absolutely necessary in order both to keep good help and to maintain team-work and loyalty in the institution.

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